ORDER NO. AD9304148C8

Service Manual

Tuner

ST-GT550

Stereo Synthesizer Tuner

Colour

(K) .... Black Type

Areas

Suffix for Model No.	Area	Colour
(E)	Europe	(K)
(EB)	Great Britain	
(EG)	Germany and Italy	
(GC)	Asia, Latin America, Middle Near East and Africa	
(GN)	Oceania	

SPECIFICATIONS (DIN 45 500)

■ FM TUNER SECTION

Frequency range	87.50~108.00 MHz (0.05-MHz steps)
Sensitivity	1.5 μV (IHF, usable)
S/N 30 dB	1.3 μV (75Ω)
S/N 26 dB	1.2 μV (75Ω)
S/N 20 dB	0.9 μV (75Ω)
IHF 46 dB stereo quieting sensitivity	28 μV (75Ω)
Total harmonic distortion	
MONO (NORMAL)	0.15%
STEREO (NORMAL)	0.2%
S/N	
MONO	70 dB (75 dB, IHF)
STEREO	65 dB (70 dB, IHF)
Frequency response	10 Hz~15 kHz, +0.5 dB to −1.0 dB
Alternate channel selectivity	
NORMAL ±400 kHz	70 dB
SUPER NARROW ±200 kHz	25 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	100 dB
IF rejection at 98 MHz	95 dB
Spurious response rejection at 98 MHz	100 dB
AM suppression	55 dB
Stereo separation	
1 kHz	45 dB
Carrier leak	
19 kHz	−62 dB (−68 dB, IHF)
38 kHz	−46 dB (−51 dB, IHF)
Channel balance (250 Hz~6.3 kHz)	±1.0 dB
Limiting point	0.85 μV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminals	75Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	
for (E) (EB) areas	
MW	522 kHz~1611 kHz (9-kHz steps) 530 kHz~1620 kHz (10-kHz steps)
LW	144 kHz~288 kHz (9-kHz steps)
for (EG) area	
AM	522 kHz~1611 kHz (9-kHz steps) 530 kHz~1620 kHz (10-kHz steps)
for (GC) (GN) areas	
AM	531 kHz~1602 kHz (9-kHz steps) 530 kHz~1600 kHz (10-kHz steps)
Sensitivity (S/N 20 dB)	
for (E) (EB) areas	
MW (at 999 kHz)	20 μV, 600 μV/m
LW (at 216 kHz)	150 μV
for (EG) (GC) (GN) areas	
AM (at 999 kHz)	20 μV, 600 μV/m
Selectivity (±9 kHz)	
for (E) (EB) areas	
MW (at 999 kHz)	40 dB
LW (at 216 kHz)	40 dB
for (EG) (GC) (GN) areas	
AM (at 999 kHz)	40 dB
Image rejection	
for (E) (EB) areas	
MW (at 999 kHz)	40 dB
LW (at 216 kHz)	40 dB
for (EG) (GC) (GN) areas	
AM (at 999 kHz)	40 dB
IF rejection	
for (E) (EB) areas	
MW (at 999 kHz)	50 dB
LW (at 216 kHz)	50 dB
for (EG) (GC) (GN) areas	
AM (at 999 kHz)	50 dB

Technics

■ GENERAL

Output voltage	
for (E) (EB) (GC) (GN) areas	0.3 V (0.6 V, IHF)
for (EG) area	0.6 V (1.2 V, IHF)
Power consumption	9 W
Power supply	
for (E) (EB) (EG) (GN) areas	AC 50 Hz/60 Hz, 230~240 V
for (GC) area	AC 50 Hz/60 Hz, 110/127/220/240 V
Dimensions (W×H×D)	430×91.5×308 mm
Weight	2.9 kg

Notes:

1. Specifications are subject to change without notice.
   Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

■ CONTENTS

	Page
●CAUTION FOR MAINS LEAD	2
●ACCESSORIES	3
●LOCATION OF CONTROLS	3, 4
●CONNECTIONS	5, 6
●MANUAL TUNER OPERATION	7
●ENJOYING RDS BROADCASTS	8~12
●DISASSEMBLY INSTRUCTIONS	13, 14
●SCHEMATIC DIAGRAM	15~27
●PRINTED CIRCUIT BOARD DIAGRAM	28~32
●WIRING CONNECTION DIAGRAM	33
●MEASUREMENTS AND ADJUSTMENTS	34~37
●FUNCTIONS OF IC TERMINALS	38
●BLOCK DIAGRAM	39, 40
●REPLACEMENT PARTS LIST	41~44, 46
●CABINET PARTS LOCATION	45
●PACKAGING	46

■ CAUTION FOR AC MAINS LEAD

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⟐ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

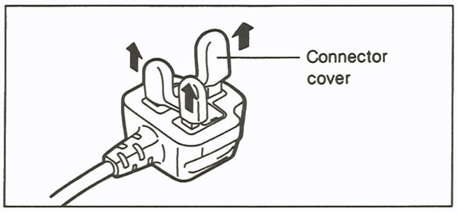
Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚ .

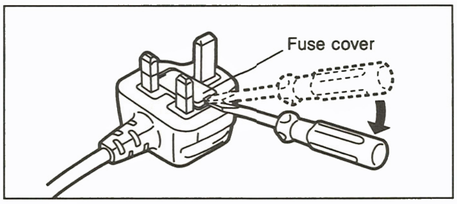
Before use

Remove the connector cover as follows.

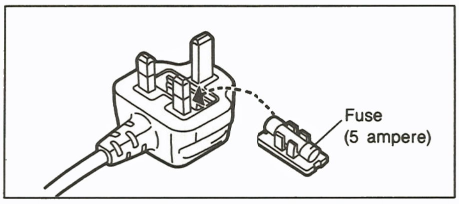


How to replace the fuse

1. Remove the fuse cover with a screwdriver.



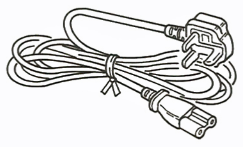
2. Replace the fuse and attach the fuse cover.



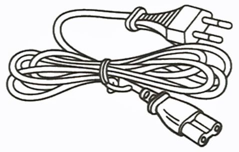
■ ACCESSORIES

- AC power supply cord 1

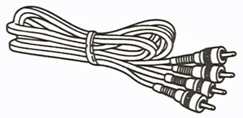
(VJA0733)
for (EB) area



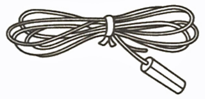
(RJA0019-2K)
for (E), (EG), (GC) areas
(RJA0036-K)
for (GN) area



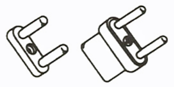
- Stereo connection cable 1
(SJP2276)



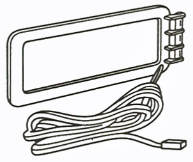
- FM indoor antenna 1
(RSA0007)



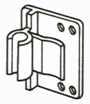
- Power plug adaptor 1
(SJP5213-2) for (GC) area



- LW/MW (AM) loop antenna 1
(SPB1163T)

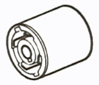


- LW/MW (AM) antenna holder 1
(SMA233-1M)

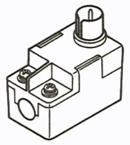


- Screws 2
(XTN3+10AFZ)

- Attachment plug 1
(SJP9009) for (EB) area

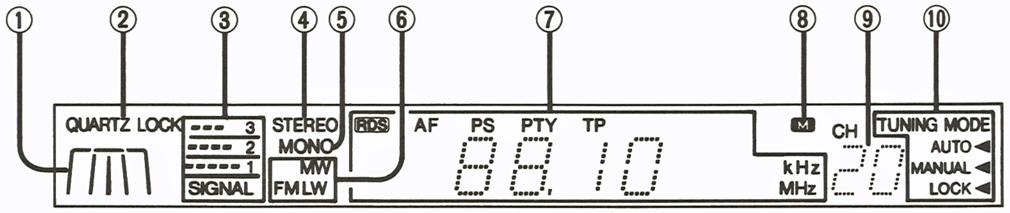


- Plug 1
(RFE0014) for (GC), (GN) areas



■ LOCATION OF CONTROLS

●Display section


①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
QUARTZ LOCK
3
2
1
SIGNAL
STEREO
MONO
MW
FM LW
RDS
AF
PS
PTY
TP
88.10
M
CH
kHz
MHz
20
TUNING MODE
AUTO
MANUAL
LOCK

① **FM IF band indicator**

② **Quartz-lock indicator (QUARTZ LOCK)**
(See page 7.)

③ **Signal-strength indicators (SIGNAL)**

④ **FM stereo indicator (STEREO)**
(See page 7.)

⑤ **FM mode indicator (MONO)**

⑥ **Band indicators (FM, MW, LW)**
(See page 7.)

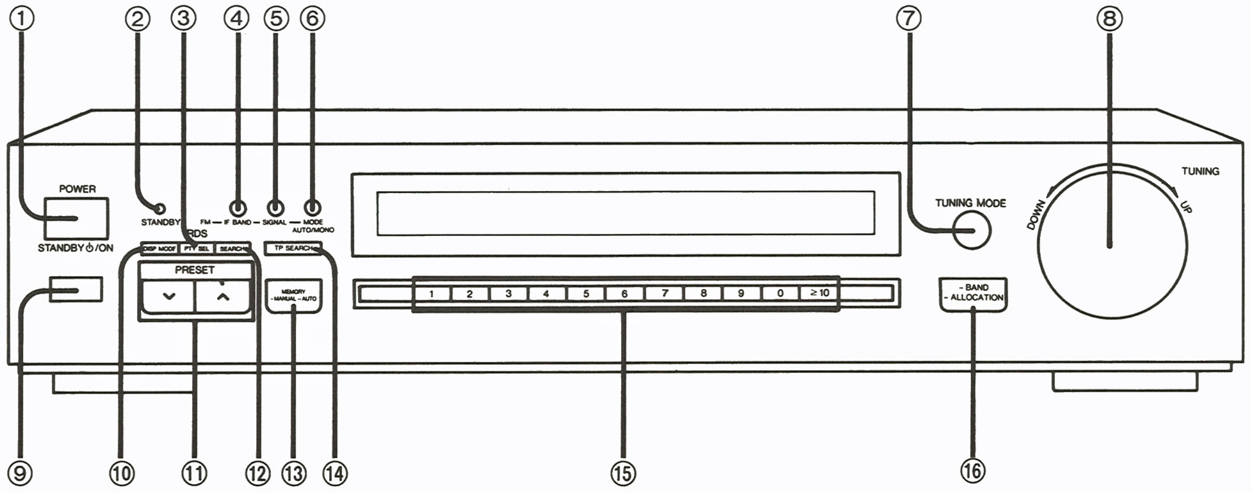
⑦ **Digital frequency/FM signal-strength/RDS display**
(See pages 9 and 12.)

⑧ **Memory indicator (M)**

⑨ **Channel display**

⑩ **Tuning mode indicators (TUNING MODE)**
(See page 7.)

●Control section


①
②
③
④
⑤
⑥
⑦
⑧
POWER
STANDBY ⏻/ON
STANDBY
RDS
FM — IF BAND — SIGNAL — MODE AUTO/MONO
DISP MODE
PTY SEL
SEARCH
TP SEARCH
PRESET
MEMORY MANUAL · AUTO
1
2
3
4
5
6
7
8
9
0
≥10
TUNING MODE
TUNING
DOWN
UP
-BAND -ALLOCATION
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯

① **Power "STANDBY ⏻ /ON" switch (POWER, STANDBY ⏻ /ON)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

② **"STANDBY" indicator (STANDBY)**
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.

③ **PTY selector (PTY SEL)**
(See page 11.)

④ **FM IF band selector (IF BAND)**

⑤ **FM signal-strength indication button (SIGNAL)**

⑥ **FM mode selector (MODE)**

⑦ **Tuning-mode selector (TUNING MODE)**
(See page 7.)

⑧ **Tuning control (TUNING)**
(See page 7.)

⑨ **Remote control signal sensor**
When connecting a Technics amplifier with the remote control transmitter to this unit, you can operate this unit using a remote control transmitter of the amplifier.
(See the operating instructions of the amplifier.)

⑩ **Display mode selector (DISP MODE)**
(See pages 9 and 12.)

⑪ **Preset channel buttons (PRESET)**

⑫ **AF/PTY search button (SEARCH)**
(See pages 9 and 11.)

⑬ **Memory button (MEMORY)**

⑭ **TP search button (TP SEARCH)**
(See page 10.)

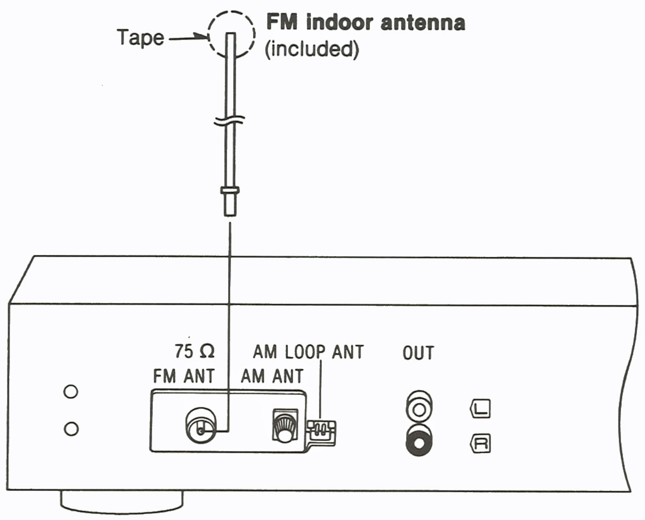
⑮ **Preset-tuning buttons (1 – 0, ≥10)**

⑯ **Band selector (-BAND, – ALLOCATION)**
(See page 7.)

■ CONNECTIONS

To connect the FM antenna

FM indoor antenna (included)


Tape
FM indoor antenna
(included)
75 Ω
FM ANT
AM LOOP ANT
AM ANT
OUT

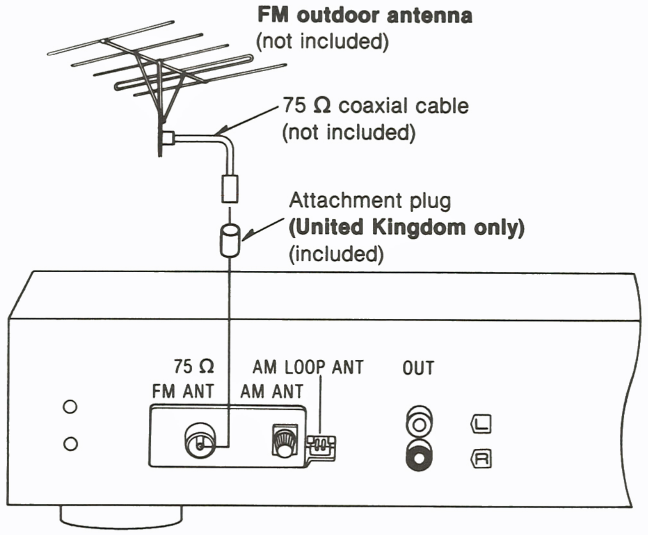
Attach to a wall (using a tape) facing in the direction of best reception.

For best reception sound quality:
Find the optimum height and direction that gives the maximum signal reception strength.

Note:
If the FM indoor antenna does not provide satisfactory reception, an outdoor antenna should be used.

FM outdoor antenna (not included)

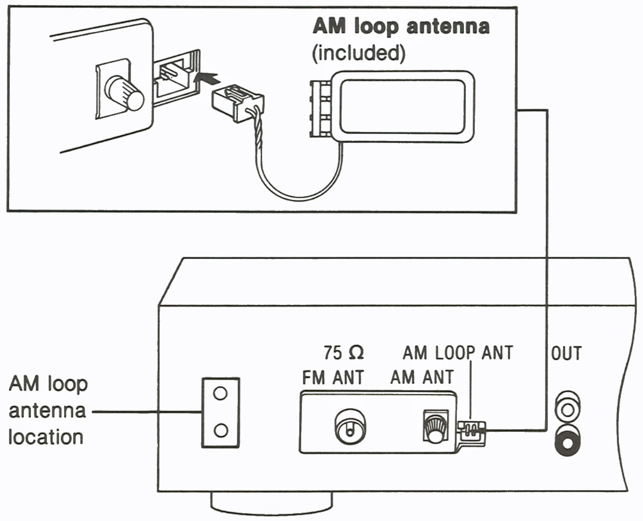
The outdoor antenna may be required in a mountainous region, or if this unit is located inside a reinforced-concrete building, etc.
Disconnect the FM indoor antenna if an FM outdoor antenna is installed.


FM outdoor antenna
(not included)
75 Ω coaxial cable
(not included)
Attachment plug
(United Kingdom only)
(included)
75 Ω
FM ANT
AM LOOP ANT
AM ANT
OUT

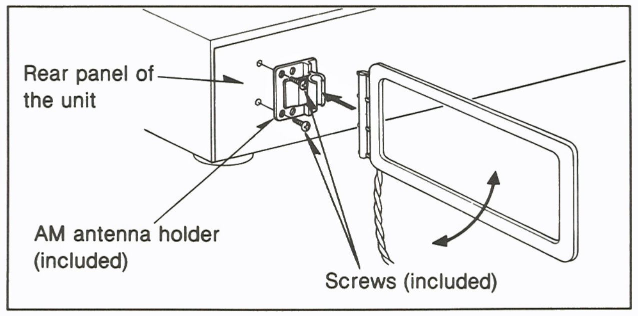
Note:
An outdoor antenna should be installed by a competent technician only.

To connect the AM (MW/LW) antenna

AM loop antenna (included)

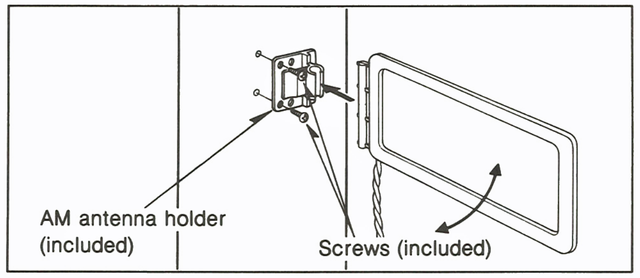

AM loop antenna
(included)
AM loop
antenna
location
75 Ω
FM ANT
AM LOOP ANT
AM ANT
OUT

Connect the AM loop antenna to the AM loop antenna terminals, and mount it vertically to the rear panel of this unit.


Rear panel of
the unit
AM antenna holder
(included)
Screws (included)

When mounting the antenna to a column, a wall or a rack

Mount it vertically.

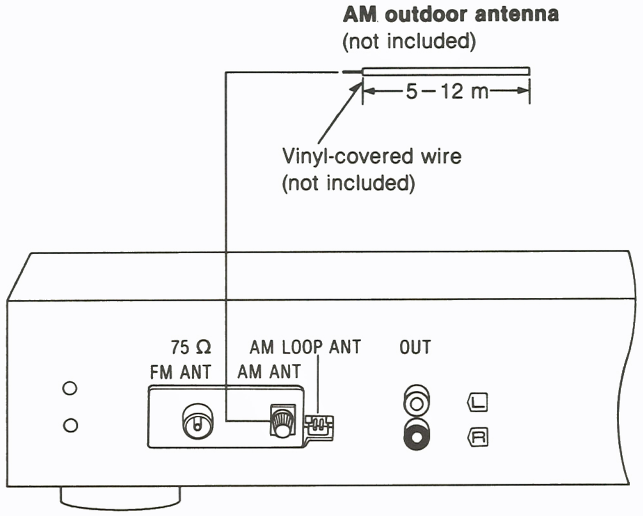

AM antenna holder
(included)
Screws (included)

Pay attention to the following points when mounting the antenna.

- Do not mount it horizontally (Doing so will impair reception).
- Do not mount it close to power cords, speaker wires or metal surfaces (Doing so will result in noise).
- Do not mount it close to a tape deck. When the tape deck is being used, chirping or beeping sounds may result.

AM outdoor antenna (not included)

An outdoor antenna may be required in a mountainous region, or if this unit is located inside a reinforced-concrete building, etc.

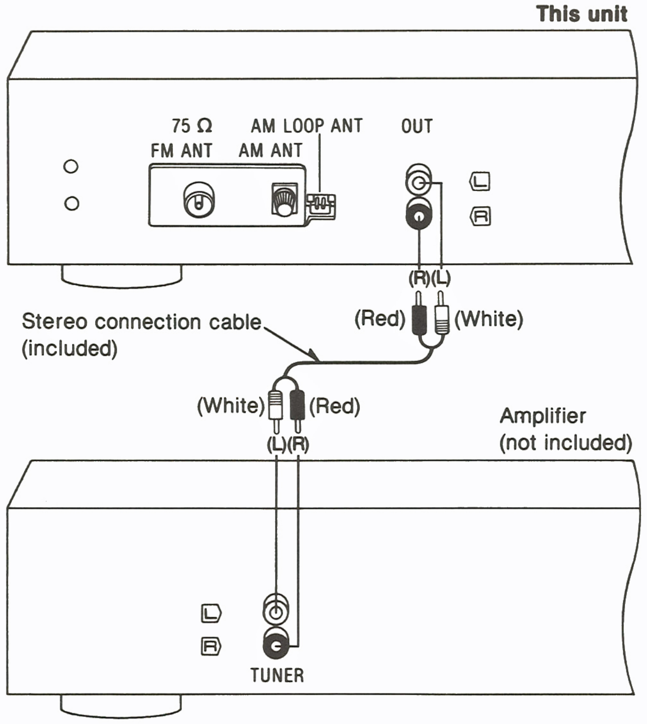

AM outdoor antenna
(not included)
5 – 12 m
Vinyl-covered wire
(not included)
75 Ω
FM ANT
AM LOOP ANT
AM ANT
OUT

Use 5 – 12 m of vinyl-covered wire horizontally at the window or other convenient location.

Notes:

- Be sure to connect the AM loop antenna even when an outdoor antenna is used.
- When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.

To connect with an amplifier

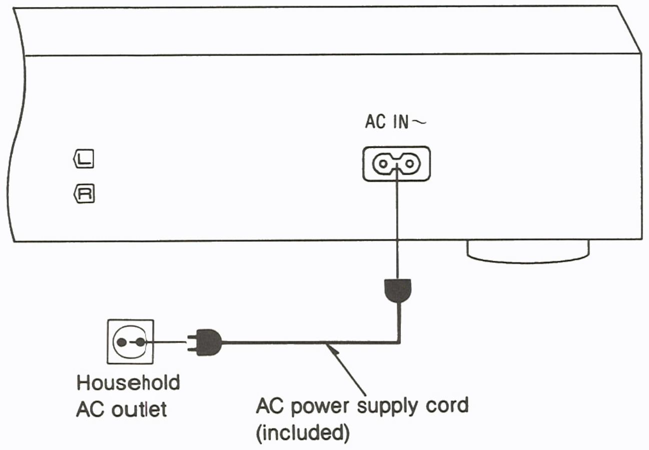

This unit
75 Ω
FM ANT
AM LOOP ANT
AM ANT
OUT
(R)(L)
Stereo connection cable
(included)
(Red)
(White)
(White)
(Red)
(L)(R)
Amplifier
(not included)
TUNER

To connect the AC power supply cord

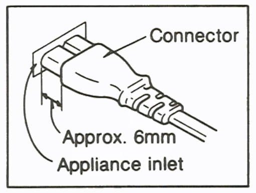
Connect the AC power supply cord (included) after all other cables are connected.

Note:
The configuration of the AC power supply cord differs according to area.

FOR UNITED KINGDOM ONLY
BE SURE TO READ THE CAUTION FOR THE AC POWRE SUPPLY CORD ON PAGE 2 BEFORE THE FOLLOWING CONNECTION.

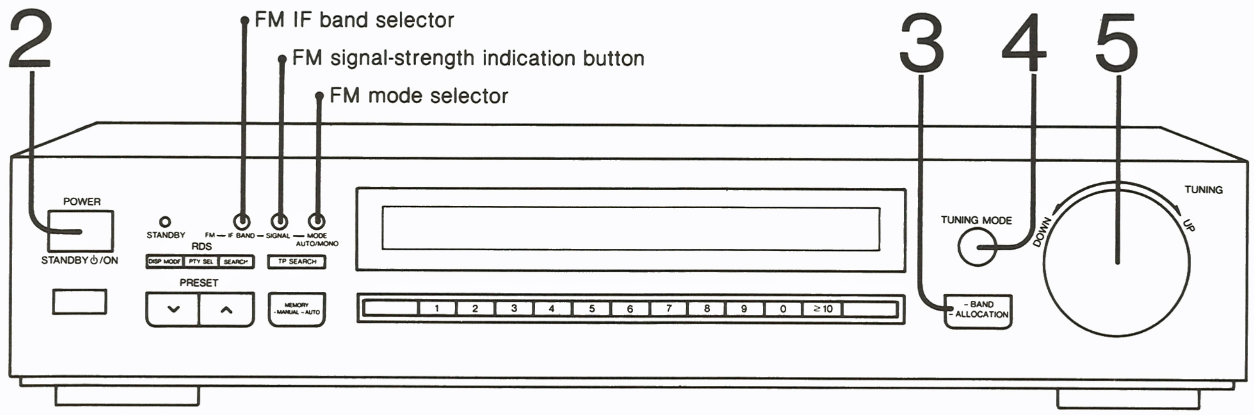

AC IN~
Household
AC outlet
AC power supply cord
(included)

Insertion of Connector
Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.


Connector
Approx. 6mm
Appliance inlet

■ MANUAL TUNER OPERATION

To listen to broadcasts by using the tuning control.


2
FM IF band selector
FM signal-strength indication button
FM mode selector
3
4
5
POWER
STANDBY ⏻/ON
STANDBY
FM — IF BAND — SIGNAL — MODE
AUTO/MONO
RDS
DISP MODE
PTY SEL
SEARCH
TP SEARCH
PRESET
MEMORY
- MANUAL - AUTO
1
2
3
4
5
6
7
8
9
0
≥10
TUNING MODE
BAND
ALLOCATION
TUNING
DOWN
UP

1 Switch the amplifier ON, and set it for listening to radio broadcasts.

2 Switch ON the power "STANDBY ⏻ /ON" switch.

3 Press the band selector to select the desired band.

The band indicator changes in the following way each time the selector is pressed.

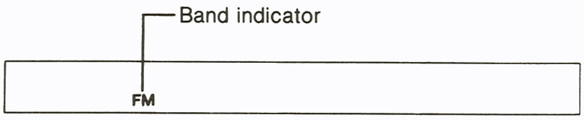
•For (E, EB) areas

FM → MW → LW (returning to FM)

or

•For (EG, GC, GN) areas

FM → AM (returning to FM)


Band indicator
FM

•For (E, EB) areas

FM: for FM broadcasts
MW: for MW broadcasts
LW: for LW broadcasts

•For (EG, GC, GN) areas

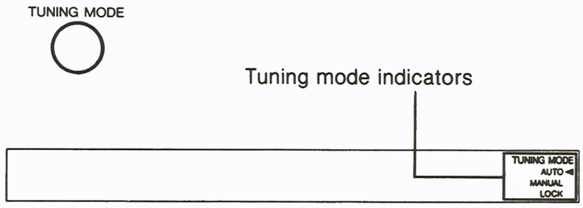
FM: for FM broadcasts
AM: for AM broadcasts

To change the MW frequency step:
The MW frequency step is set to 9 kHz before shipment. To change to 10 kHz per step, press and hold the band selector for 4 seconds while the "MW" of the band indicator is illuminated.

4 Press to select the desired tuning mode, "AUTO" or "MANUAL".

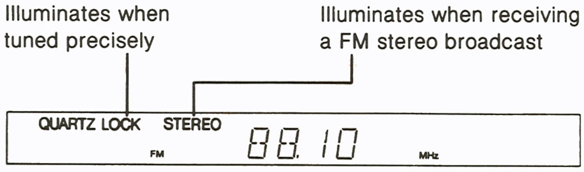
The tuning mode indicator changes in the following way each time the selector is pressed.

AUTO → MANUAL → LOCK (returning to AUTO)


TUNING MODE
Tuning mode indicators
TUNING MODE
AUTO ◀
MANUAL
LOCK

In "AUTO" mode, the next station, higher or lower in broadcast frequency, will be automatically tuned in.
In "MANUAL" mode, the frequency will change, using the smallest step available, only as the tuning control is being turned. This will allow you to tune in all of the broadcast frequencies available in that band.

5 Turn the tuning control so as to tune to the desired frequency.


Illuminates when tuned precisely
Illuminates when receiving a FM stereo broadcast
QUARTZ LOCK
STEREO
FM
88.10
MHz

■ ENJOYING RDS BROADCASTS

What is RDS (Radio Data System)?

RDS is a multiplex broadcasting system which adds a variety of message signals to the audio signals of FM broadcasts. For example, when a number of broadcast stations are broadcasting identical programs, receiving this signal enables automatic selection of the broadcast that has the strongest signal. Another feature of this system is that it is possible to automatically search for traffic information services, etc.
This unit can utilize the following signals among the various RDS signals.

■ RDS messages used by this unit

• **PS** (Program service name)	Name of the broadcast station
• **PI** (Program identification)	Program identification signal consisting of a program code
• **AF** (Alternative frequency)	List of frequencies of broadcast stations that are currently broadcasting the same programs
• **TP** (Traffic program identification)	Identification signal for traffic information broadcast stations
• **PTY** (Program type)	Identification signal for program types such as news and sport

Note:
"PTY" may not be available in some areas.
(Future function)

Functions of this unit which use RDS

■ To display the name of the broadcast station (PS display)

When this unit receives a PS signal in an RDS broadcast, the name of the broadcast station is shown on the display.
(For details, refer to page 9.)

■ To listen to the broadcast station with the best signal from different stations broadcasting the same program (AF search)

The AF search uses the PI and AF signals.
At times when a sufficiently strong FM broadcast signal is not received, a broadcast station that is broadcasting the same program but with a better signal can be searched.
(For details, refer to page 9.)

■ To listen to traffic information (TP search)

When you wish to listen to traffic information, a traffic information broadcast can be searched.
(For details, refer to page 10.)

■ To search for a program of a particular type, such as news or sport (PTY search)

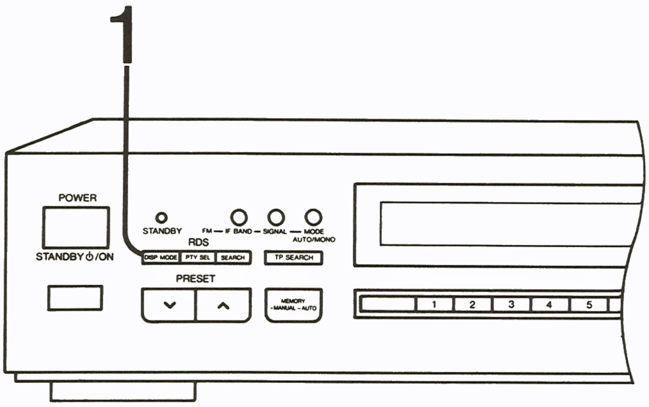
When you wish to listen to a particular type of program, a program of that type can be searched.
Furthermore, while the PTY signal is being received, the name of the type of program currently being broadcast can be shown on the display. (For details, refer to pages 11 and 12.)

Notes:

1. Even if an FM broadcast station is transmitting RDS signals, the functions of this unit may not be able to utilize these signals if the signal quality is too poor.
2. For cable-TV and radio, the frequency for the station in the antenna outlet is not the same as that of the signals in the air. Accordingly, the AF search function will not operate correctly.

Broadcast station name display—(PS display)

To display the name of a broadcasting station:

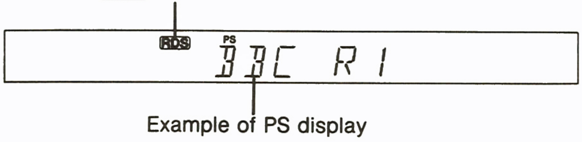

1
POWER
STANDBY ⏻/ON
STANDBY
FM — IF BAND — SIGNAL — MODE
AUTO/MONO
RDS
DISP MODE
PTY SEL
SEARCH
TP SEARCH
PRESET
MEMORY
-MANUAL -AUTO
1
2
3
4
5

(When the FM station is received)

1 Press the display mode selector.

If the FM broadcast being received provides the RDS service (" RDS " indicator will illuminate), the name of the broadcast station and "PS" indicator will be shown on the display of this unit.

RDS indicator


RDS
PS
BBC R1

Example of PS display

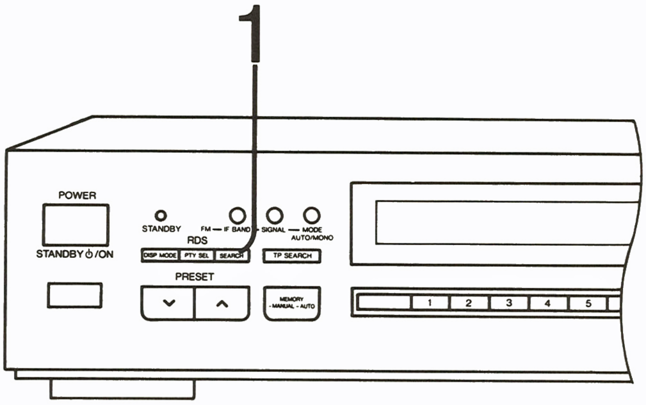
About the display mode selector:
The display mode changes in the following way each time the selector is pressed.

Frequency display ——→ PS display ——→ PTY display ⮌

(For PTY displays, refer to page 12.)

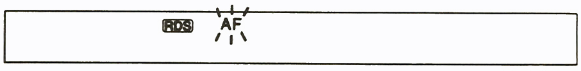
To listen to the same program from a broadcast station with a better signal—(AF search)

Carry out this operation while an RDS broadcast is being received.
(For the ST-GT550, carry this operation when the display shows the frequency display or the PS display.)


1
POWER
STANDBY ⏻/ON
STANDBY
FM — IF BAND — SIGNAL — MODE
AUTO/MONO
RDS
DISP MODE
PTY SEL
SEARCH
TP SEARCH
PRESET
MEMORY
-MANUAL -AUTO
1
2
3
4
5

1 Press the AF/PTY search button.

The AF search will begin. ("AF" will flash on the display.)



When the search is completed, the broadcast station being received will be automatically changed to the station with the best signal quality.

■ If a broadcast station with a better signal quality is not found

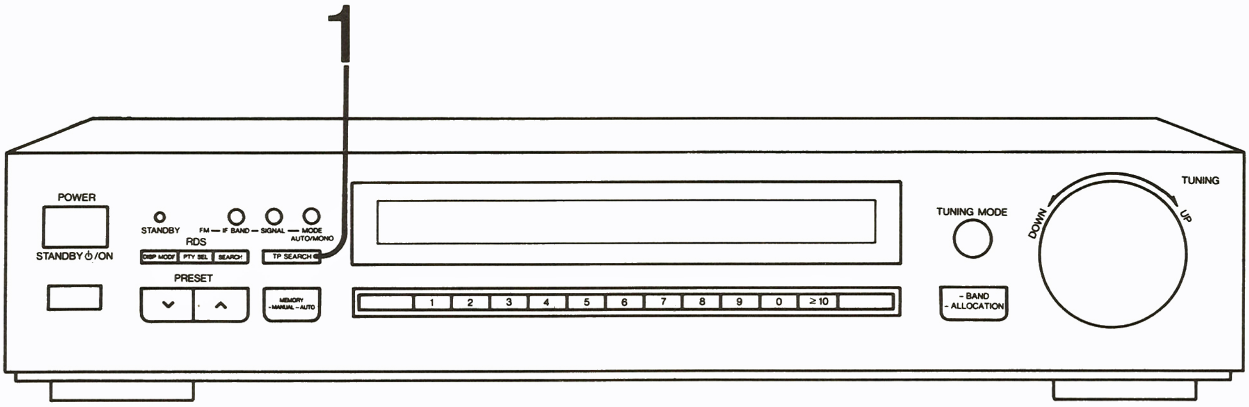
"NO AF" will be displayed for approximately 5 seconds, and the program will return to the previous broadcast station.

Note:
If the broadcast is an RDS broadcast but no AF signal is being received, the search function will not work. (When the AF/PTY search button is pressed, "NO AF" will be displayed for approximately 5 seconds, and the program will return to the previous broadcast station.)

To listen to traffic information—(TP search)

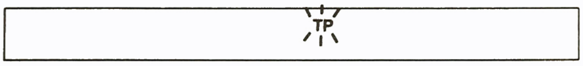
- The TP search is carried out with respect to FM broadcast stations that have been preset into the memory.

- Carry out this operation while listening to an FM broadcast.


1
POWER
STANDBY ⏻/ON
STANDBY
FM — IF BAND — SIGNAL — MODE
AUTO/MONO
RDS
DISP MODE
PTY SEL
SEARCH
TP SEARCH
PRESET
MEMORY
-MANUAL -AUTO
1
2
3
4
5
6
7
8
9
0
≥10
TUNING MODE
- BAND
- ALLOCATION
TUNING
DOWN
UP

1 Press the TP SEARCH button.

The TP search will begin. ("TP" will flash on the display.)



■ When a TP service is located

"TP ON" will be displayed for approximately 5 seconds, and the broadcast station being received will be automatically changed to the station located.
To search for a different broadcast station, press the TP search button once more while "TP ON" is still displayed.

■ If a TP service is not found

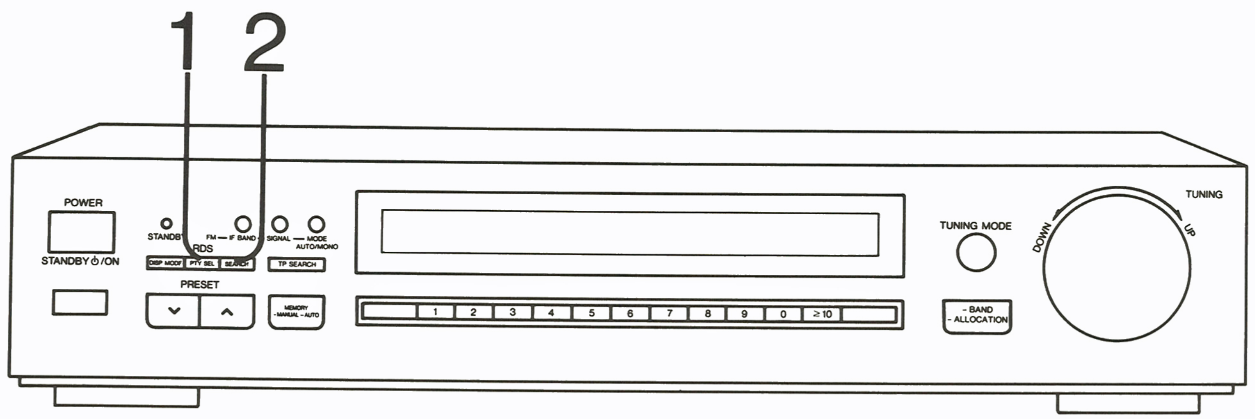
"NO TP" will be displayed for approximately 5 seconds, and the program will return to the previous broadcast station.

Note:
Depending on the time, some broadcast stations which output a TP signal may not be broadcasting traffic information. To search for another broadcast station, repeat the procedure step 1 above.

Note: "PTY" may not be available in some areas. (Future function)

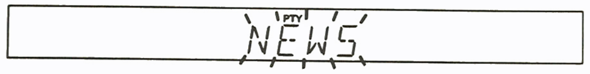
To listen to a program of a particular type, such as news or sport—(PTY search)

- The PTY search is carried out with respect to FM broadcast stations that have been preset into the memory.
- Carry out this operation while listening to an FM broadcast.



1 Press the PTY selector to select the desired program type.

(The PTY display will flash on the display.)

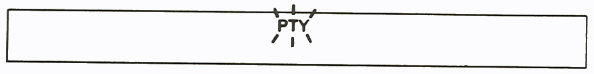


Each time the selector is pressed, the PTY display will change in sequence. (Refer to "About the PTY display" on the following page.)

Note:
Approximately 8 seconds after the PTY display starts flashing, the display will disappear.
To select a different PTY, or when proceeding to the following step 2, be sure to perform all operations while the PTY display is flashing.

2 (While PTY display is flashing) Press the AF/PTY search button.

The PTY search will begin. ("PTY" will flash on the display.)



■ When the desired type of program is located

The type of program is displayed for approximately 5 seconds, and the program will automatically change to the broadcast station that has just been located.

To search for a different broadcast station, press the AF/PTY search button once more while the type of program is displayed and "PTY" is flashing.

■ If the desired type of program is not found

"NO PTY" will be displayed for approximately 5 seconds, and the program will return to the previous broadcast station.

Most-recent memory:
The most-recent memory system "remembers" the program type last selected in step 1 above when the unit was switched OFF. For example, if "SPORT" is selected and the unit is turned OFF, when the PTY selector is pressed again at step 1, "SPORT" will be displayed.

About the PTY display

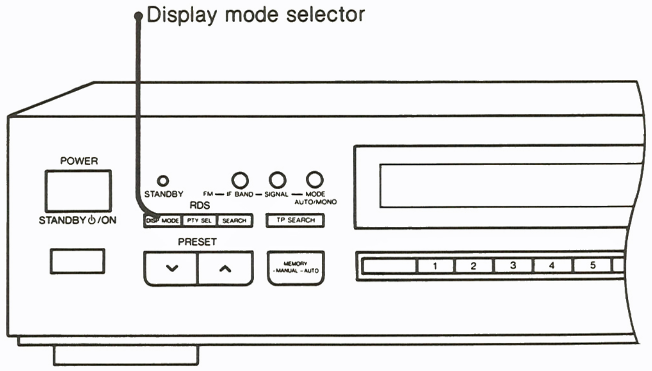
There are a total of 15 PTY displays on this unit. The display changes in order each time the PTY selector is pressed. The table below shows the order in which the display changes, and also gives an explanation of each display.

Display	Explanation
NEWS	Short accounts of facts, events and publicly expressed views, reportage and actuality.
AFFAIRS	Topical program expanding or enlarging upon the news, generally in different presentation style or concept, including documentary debate, or analysis.
INFO	Program whose purpose is to impart advice in the widest sense, including meteorological reports and forecasts, consumer affairs, medical help, etc.
SPORT	Program concerned with any aspect of sport.
EDUCATE	Program intended primarily to educate.
DRAMA	All radio plays and serials.
CULTURE	Programs concerned with any aspect of national or regional culture, including religious affairs, philosophy, social science, language, theatre, etc.
SCIENCE	Programs about the natural sciences and technology.
VARIED	Used for mainly speech-based programs, usually of a light-entertainment nature not covered by above categories. Examples are: quizzes, panel games, personality interviews, comedy and satire.
POP M	Commercial music which would generally be considered to be of current popular appeal, often featuring in current or recent record sales charts.
ROCK M	Contemporary modern music, usually written and performed by young musicians.
M.O.R. M	(Middle of the Road Music). Common term to describe music considered to be "easy-listening", as opposed to Pop, Rock or Classical. Music in this category is often, but not always, vocal, and usually of short duration (<5 min.).
LIGHT M	Classical Musical for general, rather than specialist, appreciation. Examples of music in this category are instrumental music and vocal or choral works.
CLASSICS	Performances of major orchestral works, symphonies, chamber music etc., and including Grand Opera.
OTHER M	Musical styles not fitting into any of the above categories. Particularly used for specialist music, of which Jazz, Rhythm & Blues, Folk, Country, and Reggae are examples.

After "OTHER M" is displayed, the display returns to "NEWS".

To display the name of the program type currently being listened to—(PTY display)

When listening to an RDS broadcast and a PTY signal is being received, the name of the program type can be displayed by pressing the display mode selector.



The display mode changes in the following way each time the selector is pressed.

Frequency display ⟶ PS display ⟶ PTY display ⟶ (back to Frequency display)

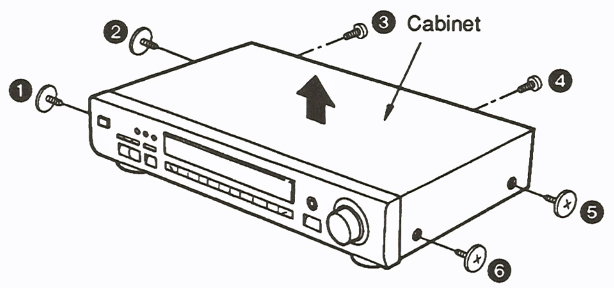
("PTY" will illuminate on the display when in the PTY display mode.)

Note:
If a PTY signal is not being received, "NO PTY" will be displayed when the PTY display mode is selected.

■ DISASSEMBLY INSTRUCTIONS

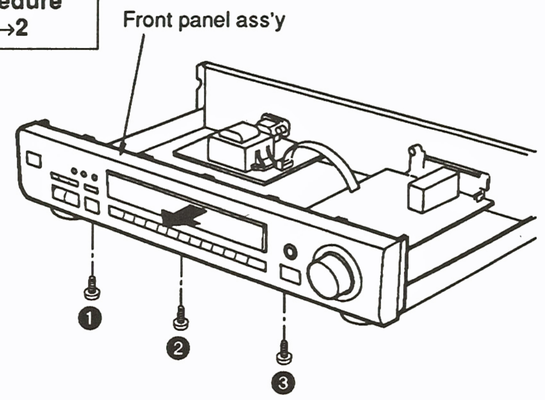
"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the cabinet
Procedure 1	


❷
❸ Cabinet
❶
❹
❺
❻

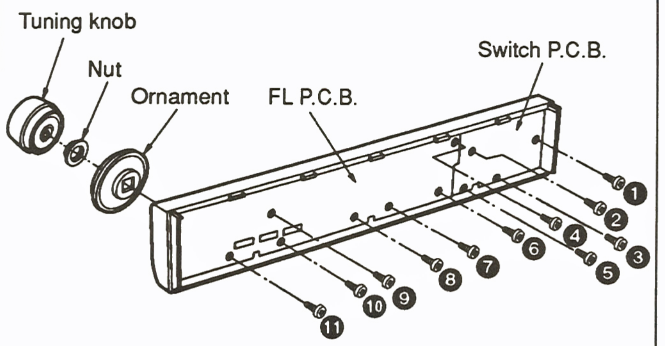
- Remove the 6 screws (❶~❻).

Ref. No. 2	Removal of the front panel ass'y
Procedure 1→2	

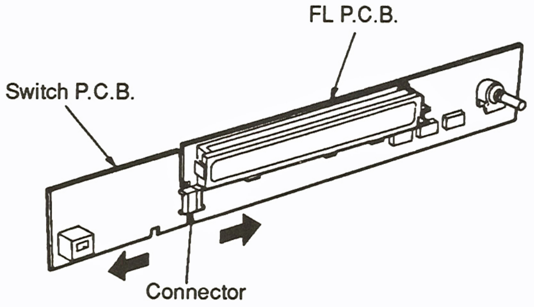

Front panel ass'y
❶
❷
❸

1. Remove the 3 screws (❶~❸).
2. Remove the front panel ass'y in the direction of arrow.

Ref. No. 3	Removal of the FL P.C.B. and switch P.C.B.
Procedure 1→2→3	

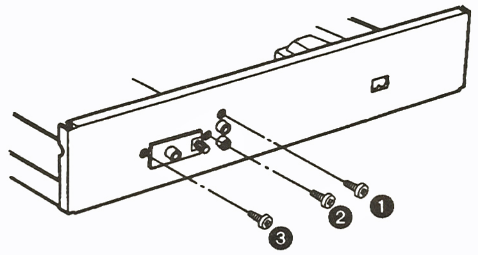

Tuning knob
Nut
Ornament
FL P.C.B.
Switch P.C.B.
❶
❷
❸
❹
❺
❻
❼
❽
❾
❿
⓫

1. Pull out the tuning knob.
2. Remove the nut.
3. Remove the ornament.
4. Remove the 11 screws (❶~⓫).

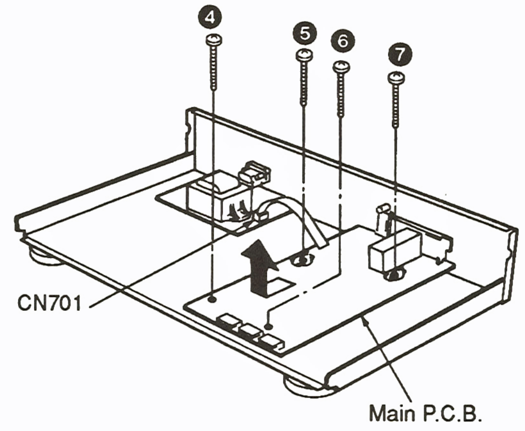

FL P.C.B.
Switch P.C.B.
Connector

5. Separate the switch P.C.B. and FL P.C.B. in the direction of arrow.

Ref. No. 4	Removal of the main P.C.B.
Procedure 1→2→4	

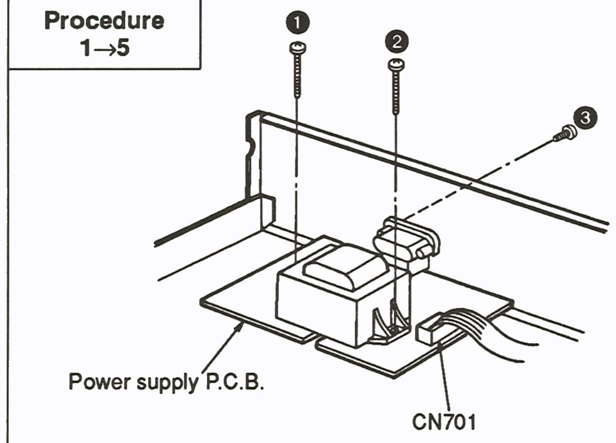


1. Remove the 3 screws (❶~❸).


❹
❺
❻
❼
CN701
Main P.C.B.

2. Remove the 1 connector (CN701).
3. Remove the 4 screws (❹~❼).
4. Remove the main P.C.B. in the direction of arrow.

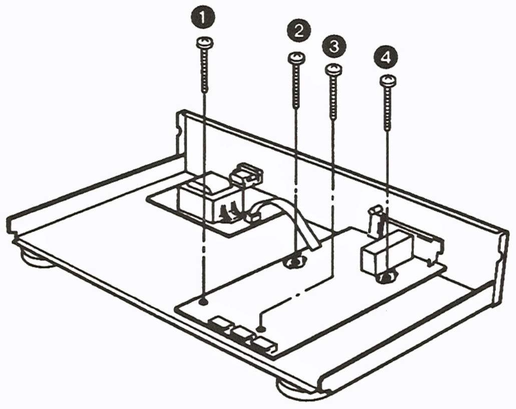
Ref. No. 5	Removal of the power supply P.C.B.
Procedure 1→5	


❶
❷
❸
Power supply P.C.B.
CN701

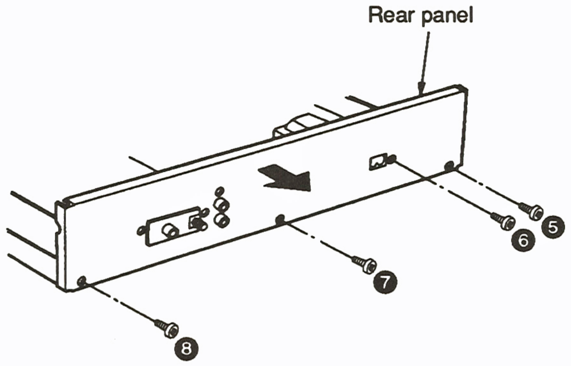
1. Remove the 1 connector (CN701).
2. Remove the 3 screws (❶~❸).

■ HOW TO CHECK THE MAIN P.C.B.

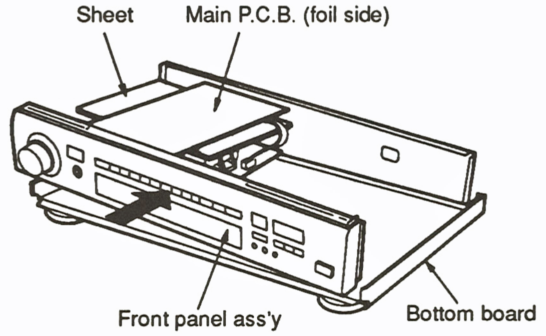
1. Remove the cabinet (see Ref. No. 1 of the disassembly instructions).
2. Remove the front panel ass'y (see Ref. No. 2 of the disassembly instructions).



1. Remove the 4 screws (❶~❹).


Rear panel
❺
❻
❼
❽

2. Remove the 4 screws (❺~❽).
3. Remove the rear panel in the direction of arrow.


Sheet
Main P.C.B. (foil side)
Front panel ass'y
Bottom board

4. As shown below, turn the main P.C.B. over to face the foil pattern toward you.
5. Reinstall the front panel ass'y to the main P.C.B.
6. When checking the soldered surface of the main P.C.B. and replacing the parts, do as shown above.

■ SCHEMATIC DIAGRAM

●FL/Switch circuit for (E), (EB), (EG) areas

(Parts list on pages 41~44)

Notes:

- ●S901: Power "⏻ STANDBY/ON" switch (POWER, ⏻ STANDBY/ON)
- ●S902: Preset-tuning switch (9)
- ●S903: Tuning mode select switch (TUNING MODE)
- ●S904: Display mode select switch (DISP MODE)
- ●S905: Preset-tuning switch (0)
- ●S906: Preset-tuning switch (1)
- ●S907: PTY select switch (PTY SEL)
- ●S908: Preset-tuning switch (≥10)
- ●S909: Preset-tuning switch (2)
- ●S910: AF/PTY search switch (SEARCH)
- ●S911: Band select switch (-BAND, – ALLOCATION)
- ●S912: Preset-tuning switch (3)
- ●S913: TP search switch (TP SEARCH)
- ●S914: FM signal-strength indication switch (SIGNAL)
- ●S915: Preset-tuning switch (4)
- ●S916: FM IF band select switch (IF BAND)
- ●S917: FM mode select switch (MODE)
- ●S918: Preset-tuning switch (5)
- ●S920: Memory switch (MEMORY)
- ●S921: Preset-tuning switch (6)
- ●S923: Preset channel switch (∨PRESET)
- ●S924: Preset-tuning switch (7)
- ●S925: Preset channel switch (PRESET∧)
- ●S927: Preset-tuning switch (8)

●Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

No mark: FM ( ): MW… for (E, EB) areas/AM… for (EG) area < >: LW ☐: Muting

●Important safety notice

Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

●This schematic diagram may be modified at any time with the development of new technology.

▬▬ : Positive voltage lines (+) – – – : Negative voltage lines (−)

●The supply part number is described alone in the replacement parts list.

Part No.	Production Part No.	Supply Part No.
Z901	RCDHC-278-E	RCDHC-278

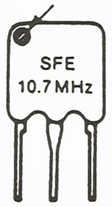
●For (E), (EB), (EG), (GC), (GN) areas

●Use of ceramic filters in pairs

The ceramic filters (CF101~CF104) for FM-IF circuit are available in three ranks. For this circuit, be sure to use the ceramics of the same rank in a pair.

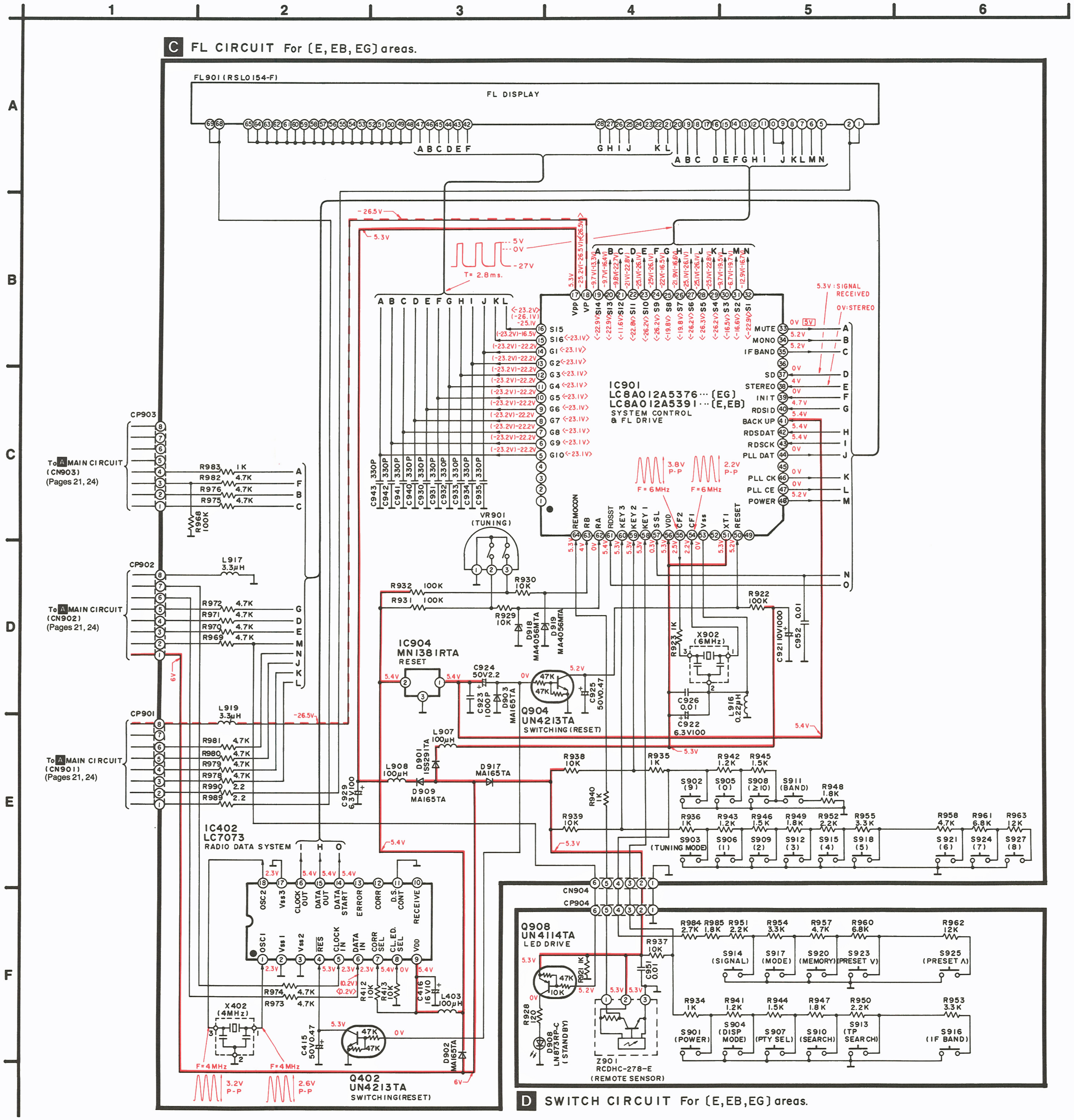
At repairing and replacement, pay close attention to the diodes (D911, D912) for use as different diodes must be used depending on each rank of the ceramic filters.

Color marking
(Red, Blue or Orange)



RANK (Color)	D911	D912	CENTER FREQUENCY
Orange	×	○	10.72 MHz
Red	○	○	10.70 MHz
Blue	○	×	10.67 MHz

Note: ○ mark: Diode is used.
× mark: Diode is not used.



1
2
3
4
5
6
A
B
C
D
E
F
C FL CIRCUIT For (E, EB, EG) areas.
FL901 (RSL0154-F)
FL DISPLAY
IC901
LC8A012A5376…(EG)
LC8A012A5391…(E,EB)
SYSTEM CONTROL & FL DRIVE
T= 2.8ms.
VR901 (TUNING)
IC904 MN1381RTA RESET
Q904 UN4213TA SWITCHING (RESET)
X902 (6MHz)
IC402 LC7073 RADIO DATA SYSTEM
X402 (4MHz)
Q402 UN4213TA SWITCHING(RESET)
To A MAIN CIRCUIT (CN903) (Pages 21, 24)
To A MAIN CIRCUIT (CN902) (Pages 21, 24)
To A MAIN CIRCUIT (CN901) (Pages 21, 24)
CP903
CP902
CP901
CN904
CP904
5.3V : SIGNAL RECEIVED
0V : STEREO
D SWITCH CIRCUIT For (E,EB,EG) areas.
Q908 UN4114TA LED DRIVE
D908 LN373IC-C (STANDBY)
Z901 RCDHC-278-E (REMOTE SENSOR)
S901 (POWER)
S902 (9)
S903 (TUNING MODE)
S904 (DISP MODE)
S905 (0)
S906 (1)
S907 (PTY SEL)
S908 (≥10)
S909 (2)
S910 (SEARCH)
S911 (BAND)
S912 (3)
S913 (TP SEARCH)
S914 (SIGNAL)
S915 (4)
S916 (IF BAND)
S917 (MODE)
S918 (5)
S920 (MEMORY)
S921 (6)
S923 (PRESET V)
S924 (7)
S925 (PRESET Λ)
S927 (8)

■ SCHEMATIC DIAGRAM

●FL/Switch/Power supply circuit for (GC), (GN) areas

(Parts list on pages 41~44)

Notes:

●S701:	Voltage selector switch in "240 V" position (110 V/127 V/220 V/240 V) for (GC) area
●S901:	Power "⏻STANDBY/ON" switch (POWER, ⏻STANDBY/ON)
●S902:	Preset-tuning switch (9)
●S903:	Tuning mode select switch (TUNING MODE)
●S904:	FM IF band select switch (IF BAND)
●S905:	Preset-tuning switch (0)
●S906:	Preset-tuning switch (1)
●S907:	FM signal-strength indication switch (SIGNAL)
●S908:	Preset-tuning switch (≥ 10)
●S909:	Preset-tuning switch (2)
●S910:	FM mode select switch (MODE)
●S911:	Band select switch (- BAND, – ALLOCATION)
●S912:	Preset-tuning switch (3)
●S915:	Preset-tuning switch (4)
●S918:	Preset-tuning switch (5)
●S920:	Memory switch (MEMORY)
●S921:	Preset-tuning switch (6)
●S923:	Preset channel switch (∨PRESET)
●S924:	Preset-tuning switch (7)
●S925:	Preset channel switch (PRESET∧)
●S927:	Preset-tuning switch (8)

●Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

No mark: FM ( ): MW…for (E, EB) areas/AM…for (GC, GN) areas

< >: LW ☐: Muting

●Important safety notice

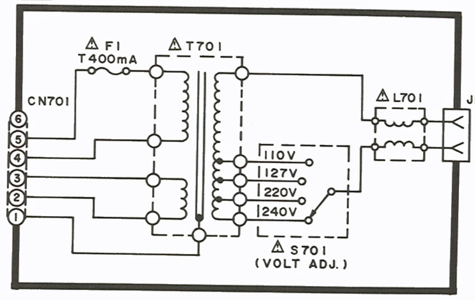
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

●This schematic diagram may be modified at any time with the development of new technology.

□□□▷ : FM OSC
■■■▶ : AM OSC
⇨ : FM IF super narrow signal
░ : AF signal lines
⇨ : FM signal
➡ : AM signal

━━━ : Positive voltage lines (+)
- - - - : Negative voltage lines (–)

B POWER SUPPLY CIRCUIT For [GC]area.


⚠F1
T400mA
⚠T701
CN701
6
5
4
3
2
1
⚠L701
⚠JK701
AC IN
110V
127V
220V
240V
⚠S701
(VOLT ADJ.)
(110/127/220/240V)
50/60Hz

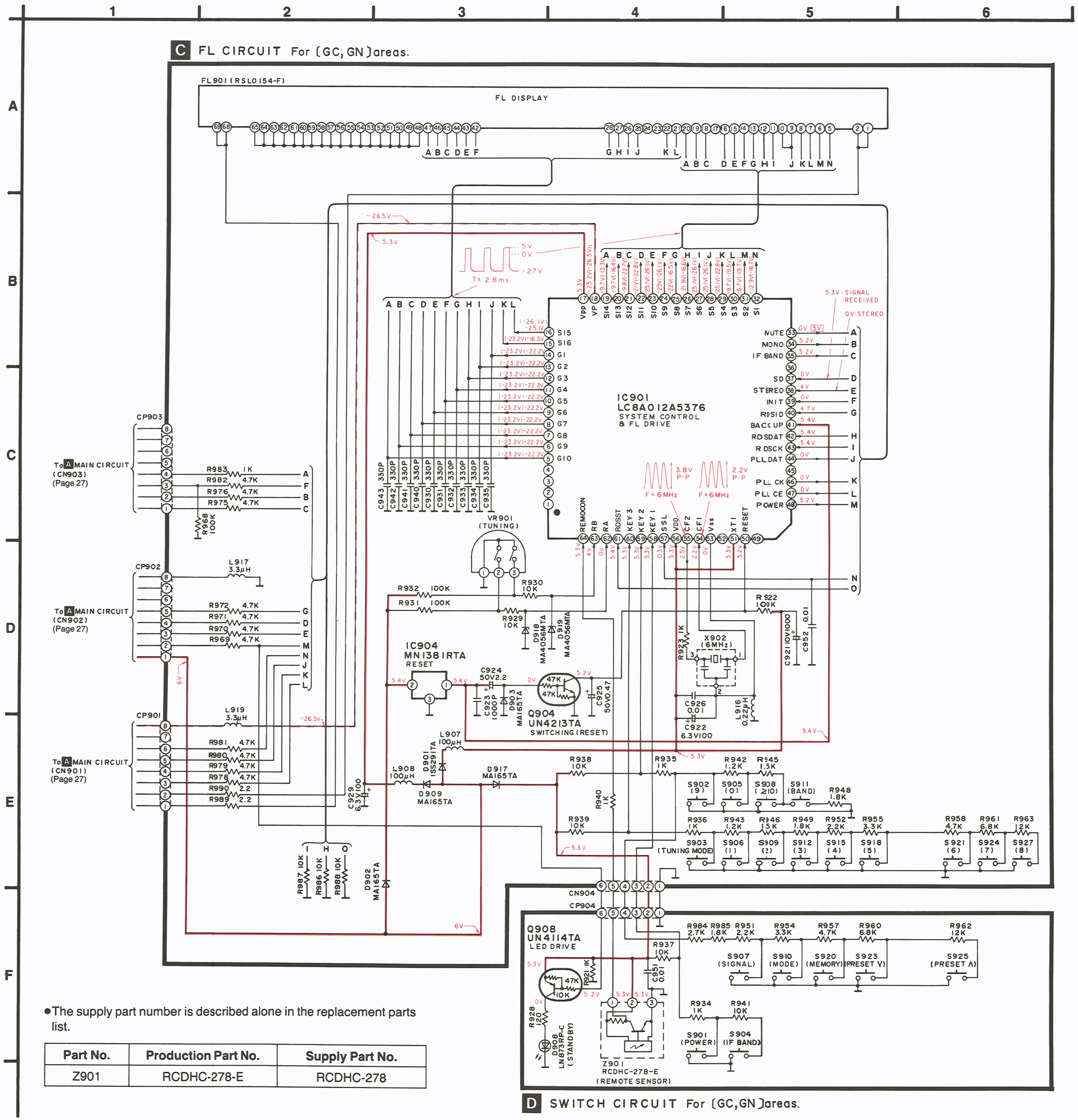
·**Caution!**

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

C FL CIRCUIT For [GC, GN]areas.

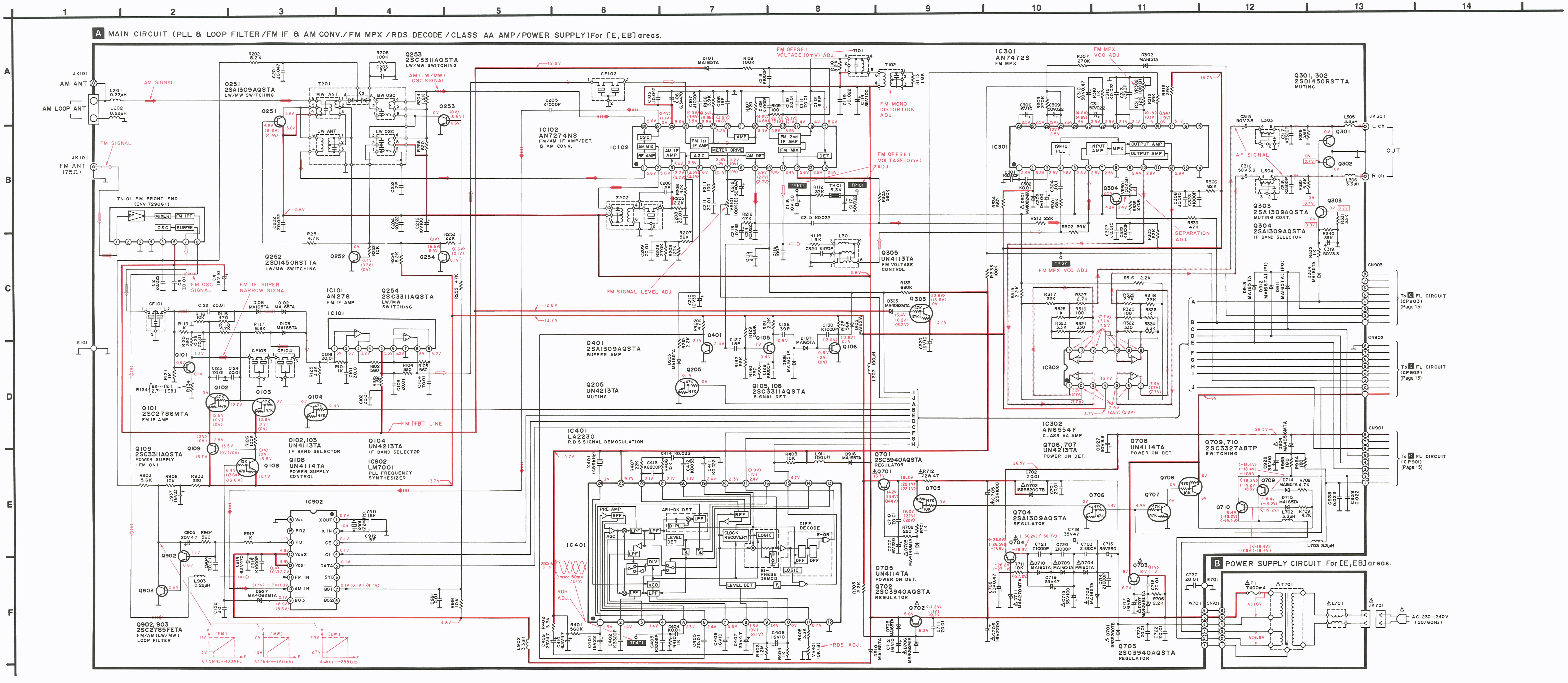

1
2
3
4
5
6
A
B
C
D
E
F
FL901 (RSL0154-F)
FL DISPLAY
IC901
LC8A012A5376
SYSTEM CONTROL
& FL DRIVE
IC904
MN1381IRTA
RESET
Q904
UN4213TA
SWITCHING (RESET)
X902
(6MHz)
VR901
(TUNING)
To A MAIN CIRCUIT (CN903) (Page 27)
To A MAIN CIRCUIT (CN902) (Page 27)
To A MAIN CIRCUIT (CN901) (Page 27)
CP903
CP902
CP901
CN904
CP904
Q908
UN4114TA
LED DRIVE
D908
LN873RP-C
(STANDBY)
Z901
RCDHC-278-E
(REMOTE SENSOR)
S901 (POWER)
S904 (IF BAND)
S902 (9)
S905 (0)
S908 (≥10)
S911 (BAND)
S903 (TUNING MODE)
S906 (1)
S909 (2)
S912 (3)
S915 (4)
S918 (5)
S921 (6)
S924 (7)
S927 (8)
S907 (SIGNAL)
S910 (MODE)
S920 (MEMORY)
S923 (PRESET V)
S925 (PRESET Λ)
T= 2.8ms.
F=6MHz
5.3V: SIGNAL RECEIVED
0V: STEREO
MUTE
MONO
IF BAND
SD
STEREO
INIT
RDS ID
BACK UP
RDS DAT
R DSCK
PLL DAT
PLL CK
PLL CE
POWER
REMOCON
RESET
XT I

D SWITCH CIRCUIT For [GC, GN]areas.

●The supply part number is described alone in the replacement parts list.

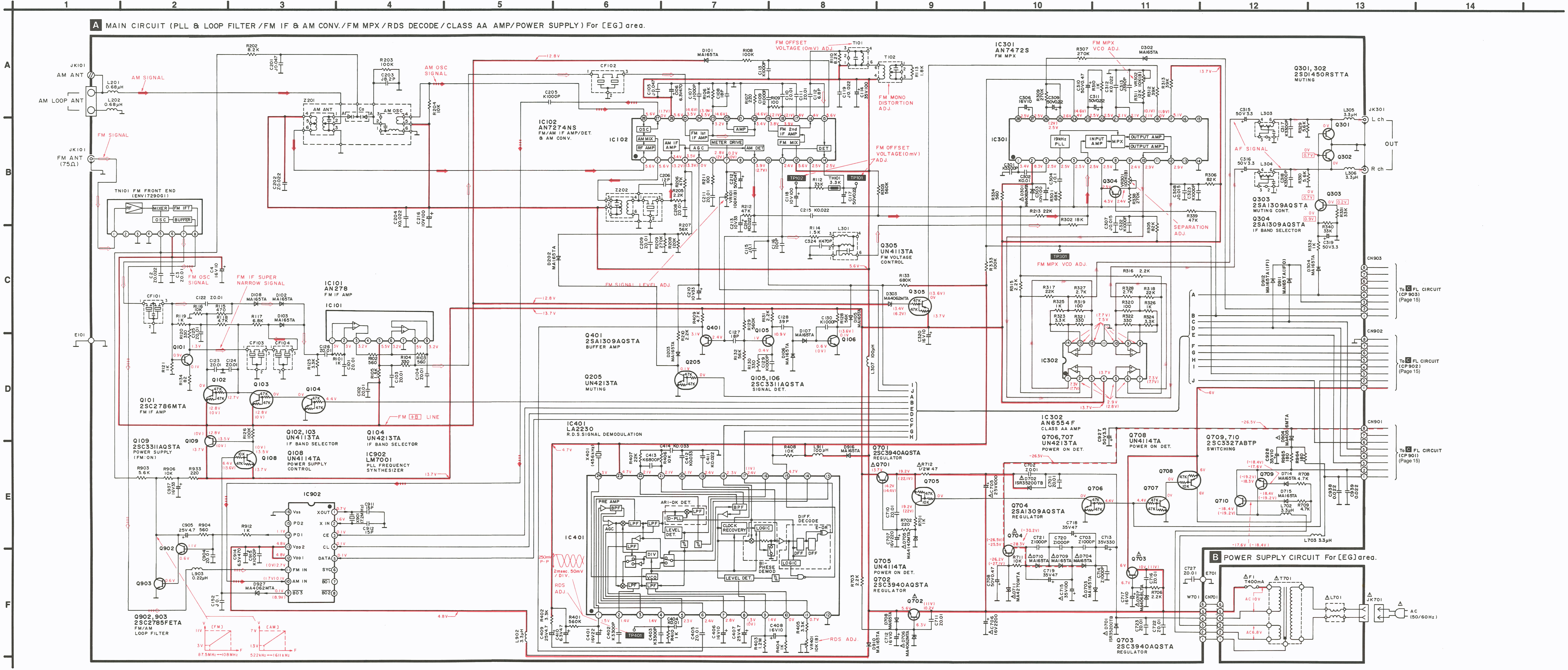
Part No.	Production Part No.	Supply Part No.
Z901	RCDHC-278-E	RCDHC-278

■ SCHEMATIC DIAGRAM ●Main/Power supply circuit for (E), (EB) areas (Parts list on pages 41~44)


A MAIN CIRCUIT (PLL & LOOP FILTER/FM IF & AM CONV./FM MPX/RDS DECODE/CLASS AA AMP/POWER SUPPLY) For [E,EB] areas.
B POWER SUPPLY CIRCUIT For [E,EB] areas.
JK101 AM ANT
AM LOOP ANT
JK101 FM ANT (75Ω)
TN101 FM FRONT END (ENV17290G1)
AM SIGNAL
FM SIGNAL
Q251 2SA1309AQSTA LW/MW SWITCHING
Q253 2SC3311AQSTA LW/MW SWITCHING
Q252 2SD1450RSTTA LW/MW SWITCHING
Q254 2SC3311AQSTA LW/MW SWITCHING
IC102 AN7274NS FM/AM IF AMP/DET. & AM CONV.
IC101 AN278 FM IF AMP
Q101 2SC2786MTA FM IF AMP
Q102, 103 UN4113TA IF BAND SELECTOR
Q104 UN4213TA IF BAND SELECTOR
Q108 UN4114TA POWER SUPPLY CONTROL
Q109 2SC3311AQSTA POWER SUPPLY (FM:ON)
IC902 LM7001 PLL FREQUENCY SYNTHESIZER
Q902, 903 2SC2785FETA FM/AM(LW/MW) LOOP FILTER
Q401 2SA1309AQSTA BUFFER AMP
Q205 UN4213TA MUTING
Q105, 106 2SC3311AQSTA SIGNAL DET.
IC401 LA2230 R.D.S SIGNAL DEMODULATION
FM OFFSET VOLTAGE (0mV) ADJ.
FM MONO DISTORTION ADJ.
FM SIGNAL LEVEL ADJ.
RDS ADJ.
IC301 AN7472S FM MPX
FM MPX VCO ADJ.
SEPARATION ADJ.
Q301, 302 2SD1450RSTTA MUTING
Q303 2SA1309AQSTA MUTING CONT.
Q304 2SA1309AQSTA IF BAND SELECTOR
Q305 UN4113TA FM VOLTAGE CONTROL
IC302 AN6554F CLASS AA AMP
Q706, 707 UN4213TA POWER ON DET.
Q708 UN4114TA POWER ON DET.
Q709, 710 2SC3327ABTP SWITCHING
Q701 2SC3940AQSTA REGULATOR
Q704 2SA1309AQSTA REGULATOR
Q705 UN4114TA POWER ON DET.
Q702 2SC3940AQSTA REGULATOR
Q703 2SC3940AQSTA REGULATOR
JK301 L ch OUT R ch
To C FL CIRCUIT (CP903) (Page 15)
To C FL CIRCUIT (CP902) (Page 15)
To C FL CIRCUIT (CP901) (Page 15)
JK701 AC 230~240V (50/60Hz)
[FM] 87.5MHz~108MHz
[MW] 522kHz~1611kHz
[LW] 144kHz~288kHz

■ SCHEMATIC DIAGRAM •Main/Power supply circuit for (EG) area (Parts list on pages 41~44)

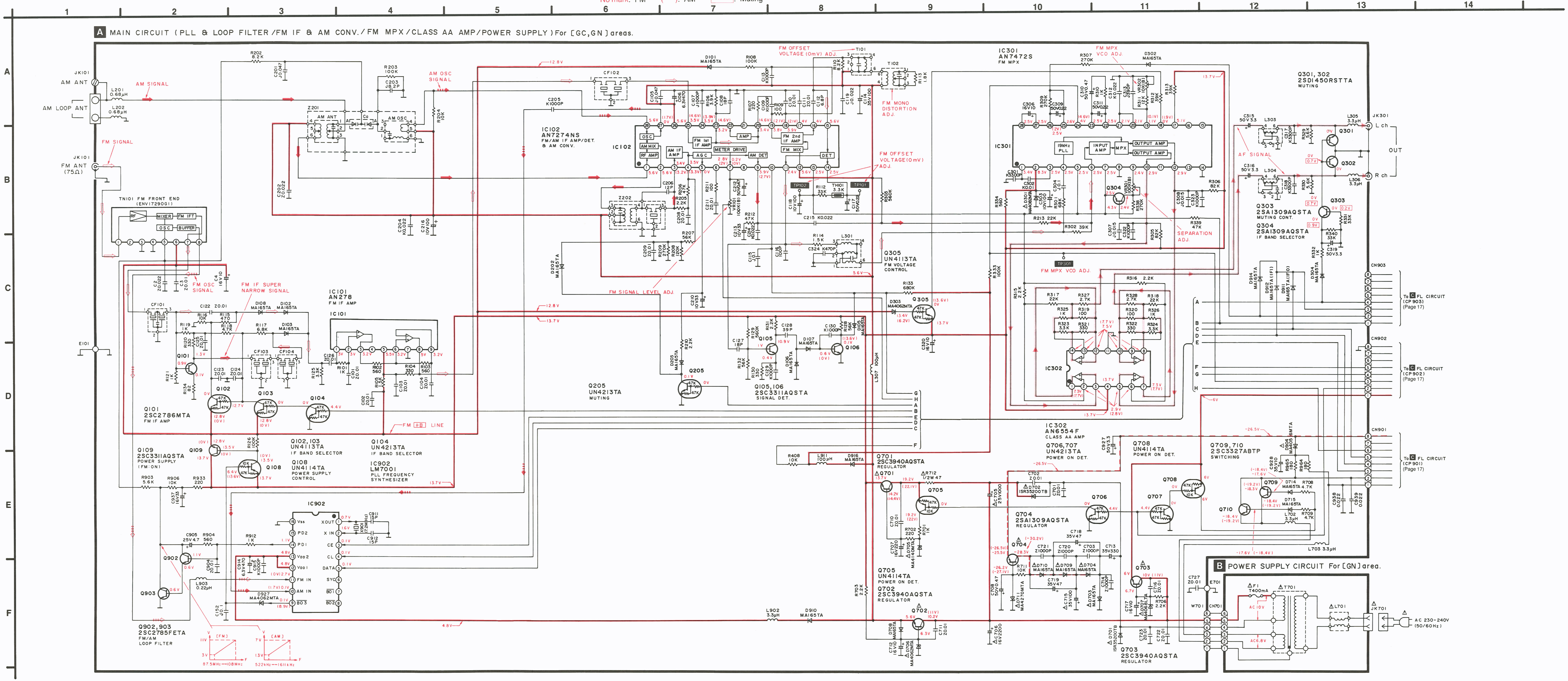
⇨	FM OSC
➡	AM OSC
⇨	FM signal
➡	AM signal
⇨	AF signal lines
⇨	FM IF super narrow signal
—	Positive voltage lines (+)
- - -	Negative voltage lines (−)


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
A MAIN CIRCUIT (PLL & LOOP FILTER / FM IF & AM CONV. / FM MPX / RDS DECODE / CLASS AA AMP/POWER SUPPLY) For [EG] area.
JK101 AM ANT
AM LOOP ANT
AM SIGNAL
FM SIGNAL
JK101 FM ANT (75Ω)
TN101 FM FRONT END (ENV17290G1)
MIXER
FM IFT
OSC
BUFFER
E101
FM OSC SIGNAL
FM IF SUPER NARROW SIGNAL
AM OSC SIGNAL
Z201
AM ANT
AM OSC
CF102
IC102 AN7274NS FM/AM IF AMP/DET. & AM CONV.
OSC
AM MIX
RF AMP
FM 1st IF AMP
AM IF AMP
AGC
METER DRIVE
AMP
FM 2nd IF AMP
FM MIX
AM DET
DET
Z202
FM OFFSET VOLTAGE (0mV) ADJ.
T101
T102
FM MONO DISTORTION ADJ.
FM OFFSET VOLTAGE (0mV) ADJ.
TP102
TP101
TH101
L301
Q305 UN4113TA FM VOLTAGE CONTROL
FM SIGNAL LEVEL ADJ.
IC101 AN278 FM IF AMP
CF101
CF103
CF104
Q101
Q102
Q103
Q104
Q101 2SC2786MTA FM IF AMP
Q109 2SC3311AQSTA POWER SUPPLY (FM:ON)
Q102, 103 UN4113TA IF BAND SELECTOR
Q108 UN4114TA POWER SUPPLY CONTROL
Q104 UN4213TA IF BAND SELECTOR
IC902 LM7001 PLL FREQUENCY SYNTHESIZER
FM +B LINE
Q401 2SA1309AQSTA BUFFER AMP
Q205 UN4213TA MUTING
Q105, 106 2SC3311AQSTA SIGNAL DET.
Q401
Q205
Q105
Q106
IC902
Vss
PD2
PD1
VDD2
VDD1
FM IN
AM IN
BO3
XOUT
X IN
CE
CL
DATA
SYC
BO1
BO2
Q902
Q903
Q902, 903 2SC2785FETA FM/AM LOOP FILTER
87.5MHz ~ 108MHz
522kHz ~ 1611kHz
IC401 LA2230 R.D.S SIGNAL DEMODULATION
PRE AMP
BPF
AGC
LPF
ARI-DK DET.
D-PLL
LEVEL DET.
CLOCK RECOVERY
LOGIC
DIFF. DECODE
E-OR
DFF
VCO
BI-PHASE DEMOD
LEVEL DET.
DIV
RDS ADJ.
TP401
IC301 AN7472S FM MPX
FM MPX VCO ADJ.
19kHz PLL
INPUT AMP
MPX
OUTPUT AMP
Q304
SEPARATION ADJ.
TP301
FM MPX VCO ADJ.
IC302
Q301, 302 2SD1450RSTTA MUTING
Q301
Q302
Q303
Q303 2SA1309AQSTA MUTING CONT.
Q304 2SA1309AQSTA IF BAND SELECTOR
AF SIGNAL
JK301
L ch
R ch
OUT
CN903
To CN FL CIRCUIT (CP903) (Page 15)
CN902
To CN FL CIRCUIT (CP902) (Page 15)
CN901
To CN FL CIRCUIT (CP901) (Page 15)
IC302 AN6554F CLASS AA AMP
Q706, 707 UN4213TA POWER ON DET.
Q708 UN4114TA POWER ON DET.
Q709, 710 2SC3327ABTP SWITCHING
Q701 2SC3940AQSTA REGULATOR
Q701
Q705
Q704 2SA1309AQSTA REGULATOR
Q704
Q706
Q707
Q708
Q709
Q710
Q705 UN4114TA POWER ON DET.
Q702 2SC3940AQSTA REGULATOR
Q702
Q703
Q703 2SC3940AQSTA REGULATOR
B POWER SUPPLY CIRCUIT For [EG] area.
F1 T400mA
T701
L701
JK701
AC (50/60Hz)
E701
W701
CN701

■ SCHEMATIC DIAGRAM •Main/Power supply circuit for (GC), (GN) areas (Parts list on pages 41~44)

•Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-imedance) with the chassis taken as standard.
Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

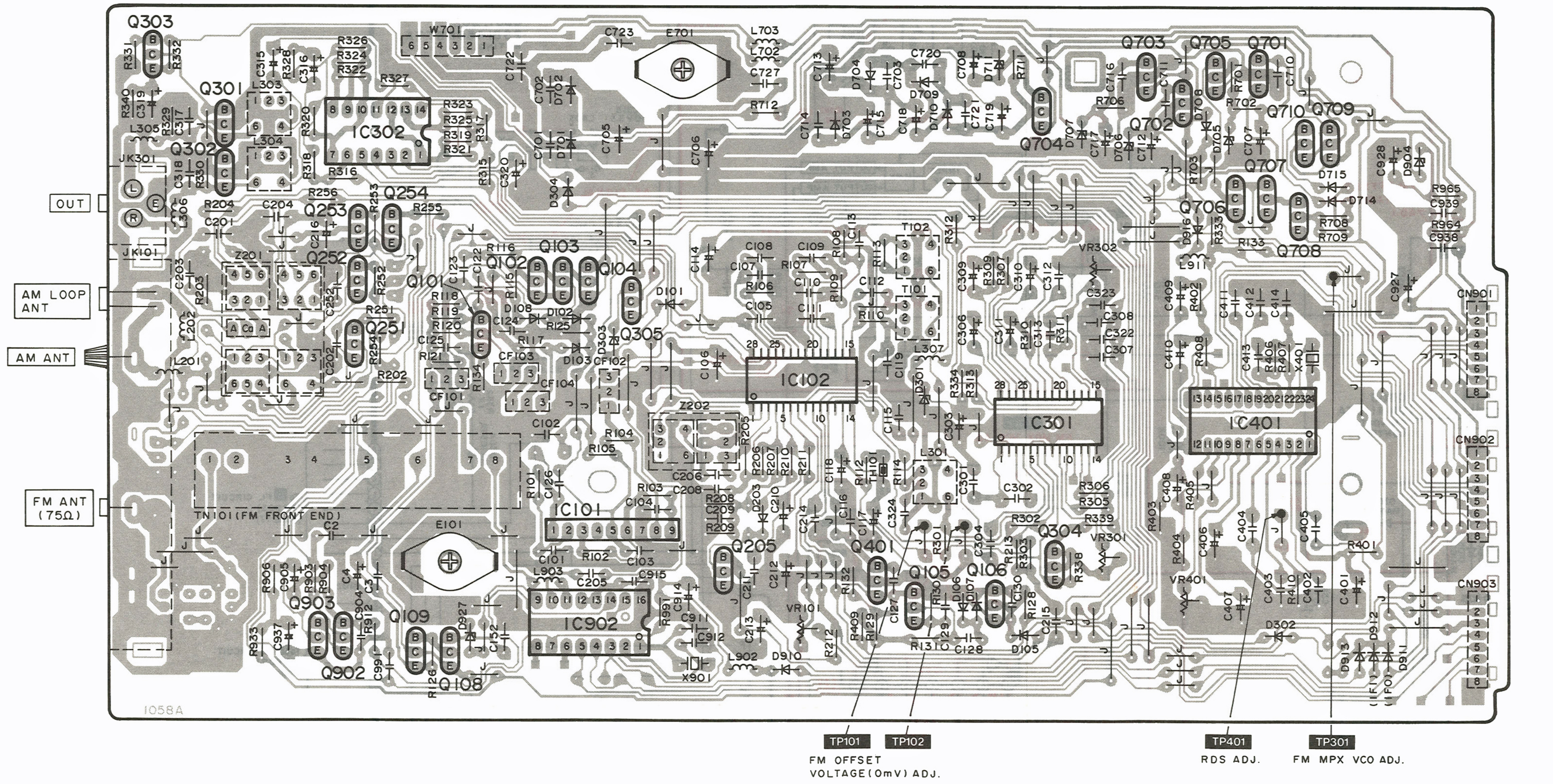
No mark: FM ( ): AM ☐: Muting


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
A MAIN CIRCUIT (PLL & LOOP FILTER/FM IF & AM CONV./FM MPX/CLASS AA AMP/POWER SUPPLY) For [GC,GN] areas.
JK101 AM ANT
AM LOOP ANT
AM SIGNAL
FM SIGNAL
JK101 FM ANT (75Ω)
TN101 FM FRONT END (ENV17290G1)
RF
MIXER
FM IFT
OSC
BUFFER
AM OSC SIGNAL
FM OSC SIGNAL
FM IF SUPER NARROW SIGNAL
IC101 AN278 FM IF AMP
IC102 AN7274NS FM/AM IF AMP/DET. & AM CONV.
FM OFFSET VOLTAGE (0mV) ADJ.
FM MONO DISTORTION ADJ.
FM SIGNAL LEVEL ADJ
FM MPX VCO ADJ.
IC301 AN7472S FM MPX
19kHz PLL
INPUT AMP
MPX
OUTPUT AMP
SEPARATION ADJ.
Q301, 302 2SD1450RSTTA MUTING
Q303 2SA1309AQSTA MUTING CONT.
Q304 2SA1309AQSTA IF BAND SELECTOR
Q305 UN4113TA FM VOLTAGE CONTROL
Q101 2SC2786MTA FM IF AMP
Q102, 103 UN4113TA IF BAND SELECTOR
Q104 UN4213TA IF BAND SELECTOR
Q108 UN4114TA POWER SUPPLY CONTROL
Q109 2SC3311AQSTA POWER SUPPLY (FM:ON)
Q105, 106 2SC3311AQSTA SIGNAL DET.
Q205 UN4213TA MUTING
IC902 LM7001 PLL FREQUENCY SYNTHESIZER
Q902, 903 2SC2785FETA FM/AM LOOP FILTER
IC302 AN6554F CLASS AA AMP
Q706, 707 UN4213TA POWER ON DET.
Q708 UN4114TA POWER ON DET.
Q709, 710 2SC3327ABTP SWITCHING
Q701 2SC3940AQSTA REGULATOR
Q704 2SA1309AQSTA REGULATOR
Q705 UN4114TA POWER ON DET.
Q702 2SC3940AQSTA REGULATOR
Q703 2SC3940AQSTA REGULATOR
B POWER SUPPLY CIRCUIT For [GN] area.
AC 230-240V (50/60Hz)
JK301 L ch OUT R ch
AF SIGNAL
To C FL CIRCUIT (CP903) (Page 17)
To C FL CIRCUIT (CP902) (Page 17)
To C FL CIRCUIT (CP901) (Page 17)
CN903
CN902
CN901
FM +B LINE
[FM] 87.5MHz~108MHz
[AM] 522kHz~1611kHz

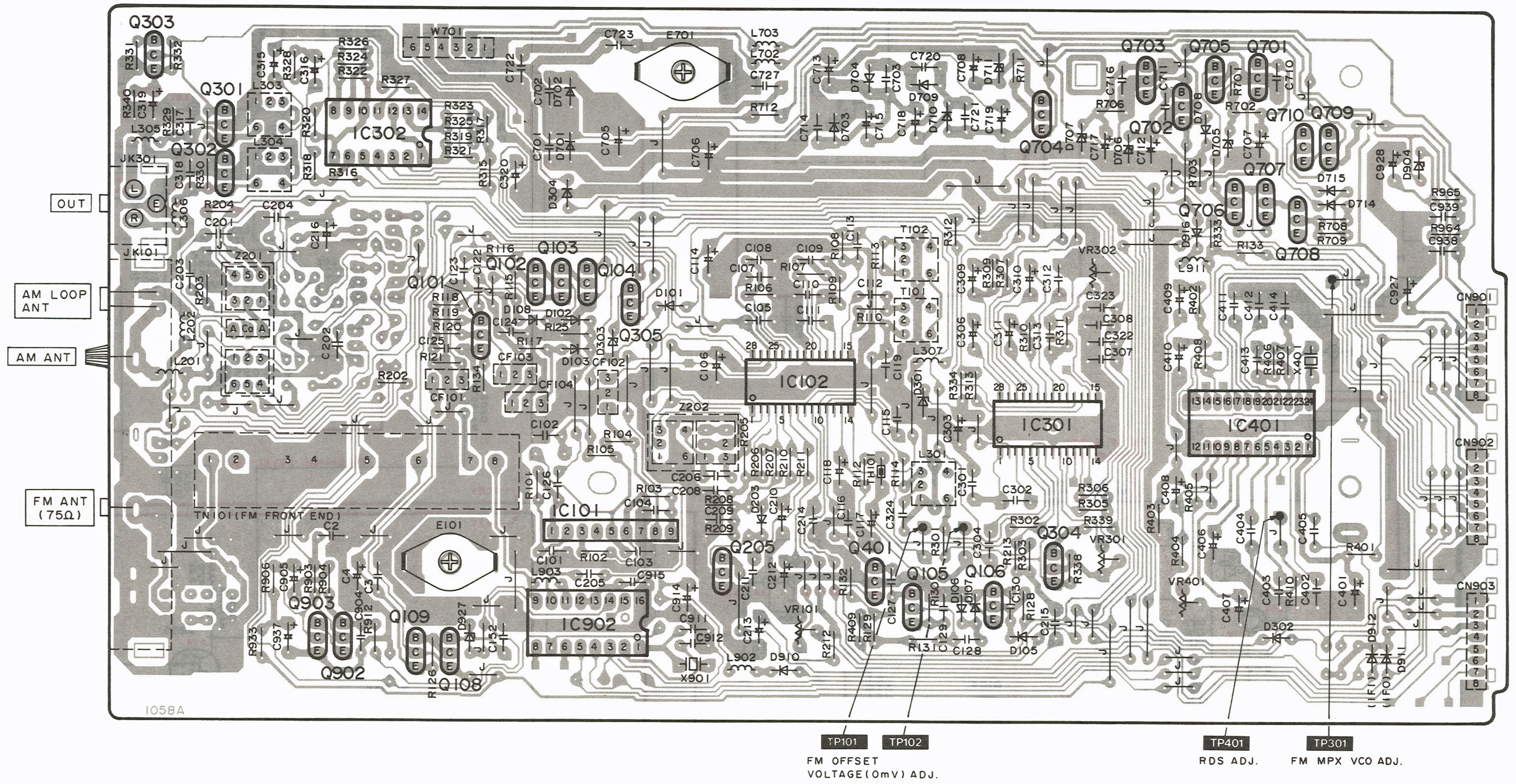
■ PRINTED CIRCUIT BOARD DIAGRAM

•This circuit board diagram may be modified at any time with the development of new technology.

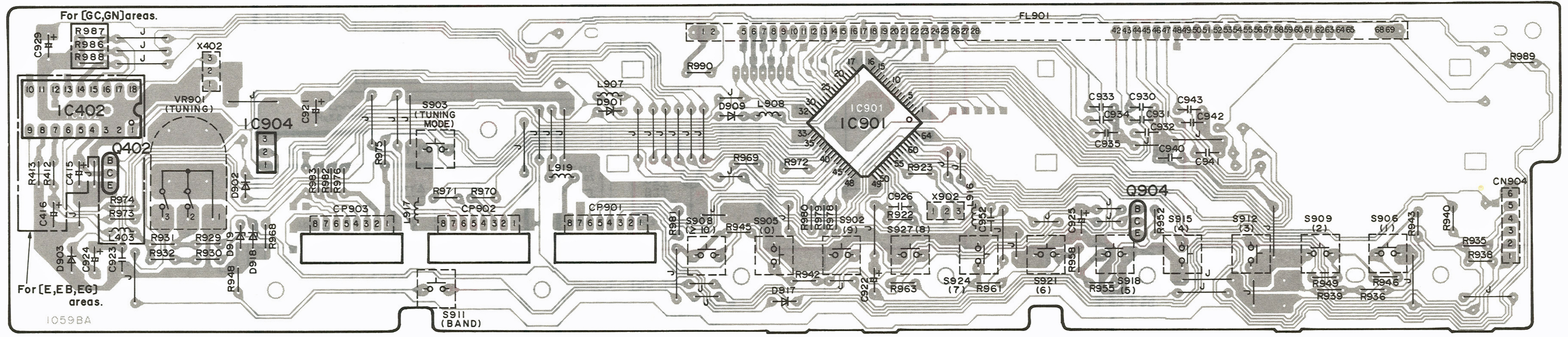
A MAIN P.C.B. For (E, EB) areas. (REP1617E-M···(E) REP1617F-M···(EB))


OUT
AM LOOP ANT
AM ANT
FM ANT (75Ω)
IC302
IC102
IC301
IC401
IC101
IC902
TN101 (FM FRONT END)
CN901
CN902
CN903
1058A
TP101
TP102
FM OFFSET VOLTAGE(0mV) ADJ.
TP401
RDS ADJ.
TP301
FM MPX VCO ADJ.

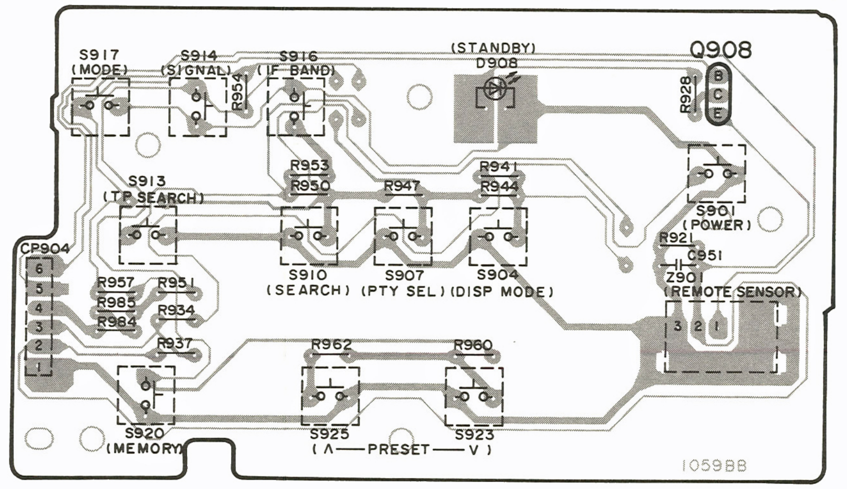
A MAIN P.C.B. For (EG) area. (REP1617D-M)


OUT
AM LOOP ANT
AM ANT
FM ANT (75Ω)
IC302
IC102
IC301
IC401
IC101
IC902
TN101 (FM FRONT END)
CN901
CN902
CN903
1058A
TP101
TP102
FM OFFSET VOLTAGE(0mV) ADJ.
TP401
RDS ADJ.
TP301
FM MPX VCO ADJ.

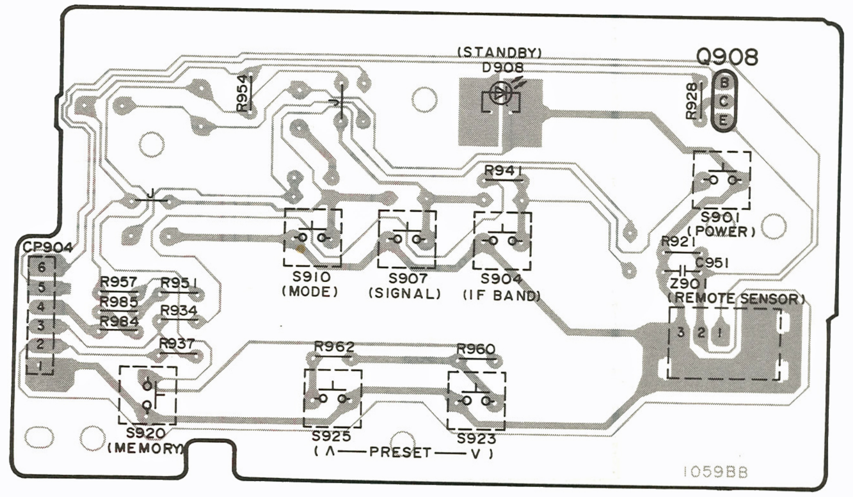
C FL P.C.B. (REP1618B-S···(EG) REP1618C-S···(GC,GN) REP1618D-S···(E,EB))


For (GC,GN) areas.
FL901
IC402
IC904
IC901
VR901 (TUNING)
S903 (TUNING MODE)
CP903
CP902
CP901
CN904
Q904
S911 (BAND)
For (E,EB,EG) areas.
1059BA

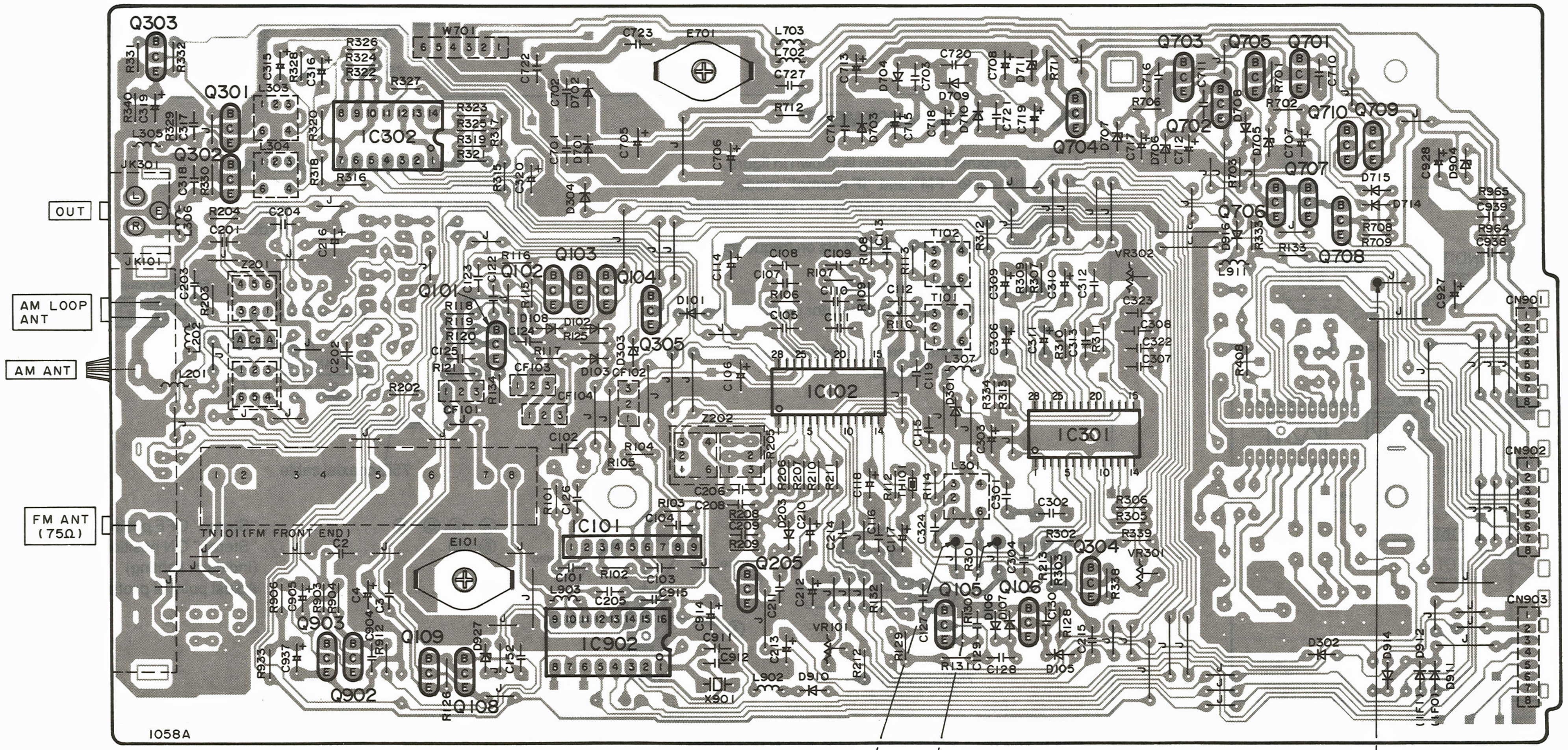
D SWITCH P.C.B. For (E, EB, EG) areas. (REP1618B-S···(EG) REP1618D-S···(E,EB))


S917 (MODE)
S914 (SIGNAL)
S916 (IF BAND)
(STANDBY) D908
Q908
S913 (T.P. SEARCH)
S901 (POWER)
S910 (SEARCH)
S907 (PTY SEL)
S904 (DISP MODE)
Z901 (REMOTE SENSOR)
CP904
S920 (MEMORY)
S925 (∧ — PRESET — ∨) S923
1059BB

D SWITCH P.C.B. For (GC,GN) areas. (REP1618C-S)


(STANDBY) D908
Q908
S901 (POWER)
S910 (MODE)
S907 (SIGNAL)
S904 (IF BAND)
Z901 (REMOTE SENSOR)
CP904
S920 (MEMORY)
S925 (∧ — PRESET — ∨) S923
1059BB

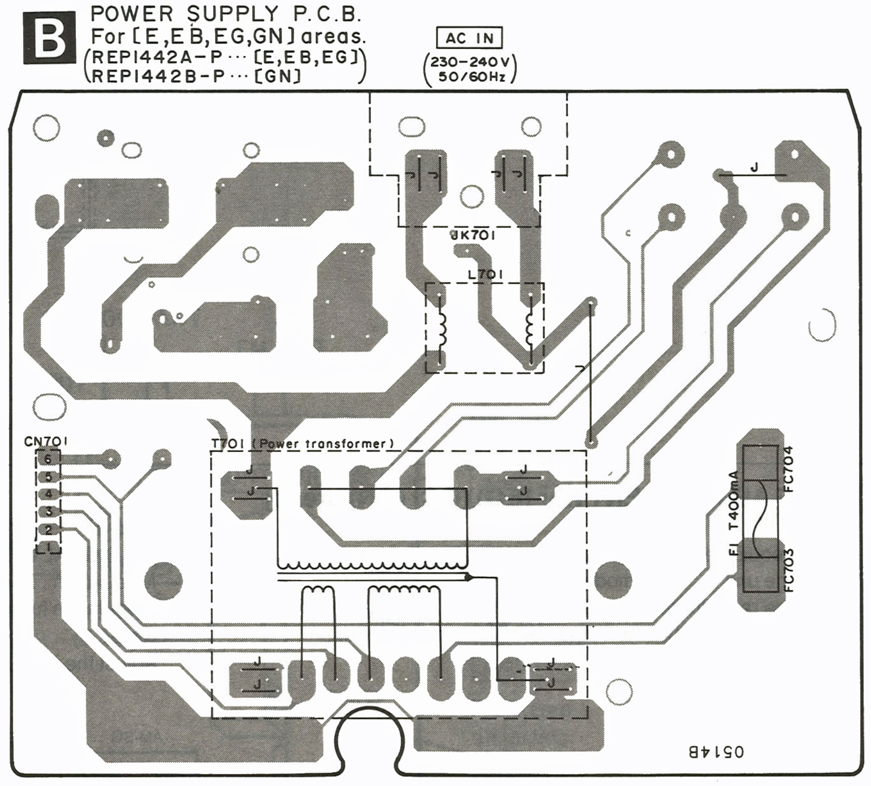
A MAIN P.C.B. For (GC,GN) areas. (REP1617G-M)


OUT
AM LOOP ANT
AM ANT
FM ANT (75Ω)
JK301
JK101
TN101 (FM FRONT END)
IC101
IC102
IC301
IC302
IC902
Q101
Q102
Q103
Q104
Q105
Q106
Q108
Q109
Q205
Q301
Q302
Q303
Q304
Q305
Q701
Q702
Q703
Q704
Q705
Q706
Q707
Q708
Q709
Q710
Q902
Q903
E101
E701
W701
VR101
VR301
VR302
T101
T102
CN901
CN902
CN903
X901
1058A

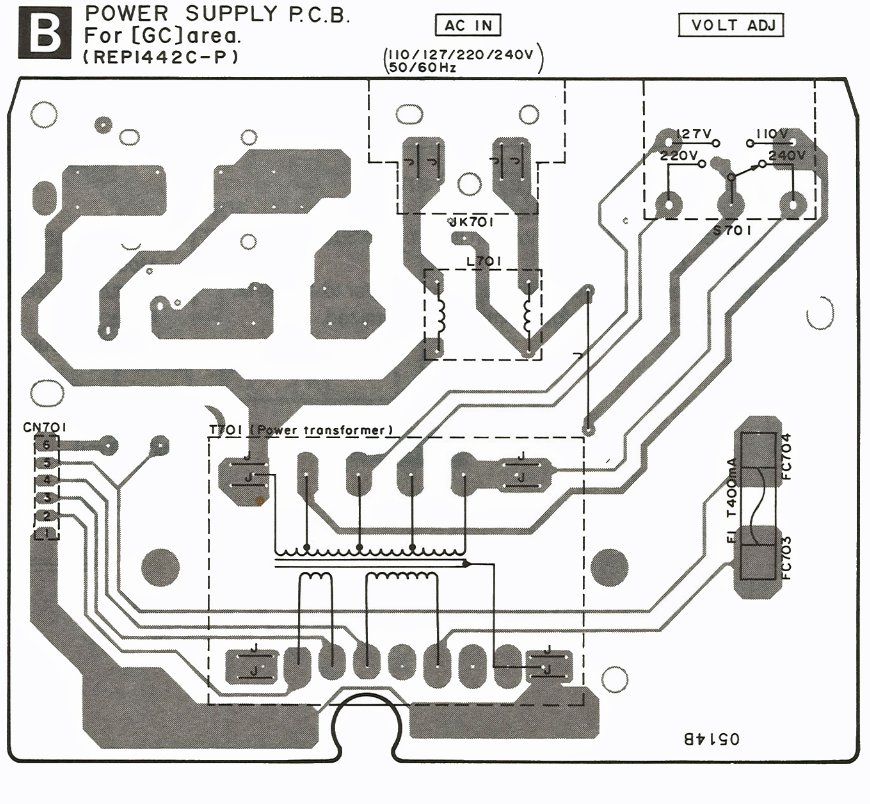
TP101 TP102
FM OFFSET VOLTAGE (0mV) ADJ.

TP301
FM MPX VCO ADJ.

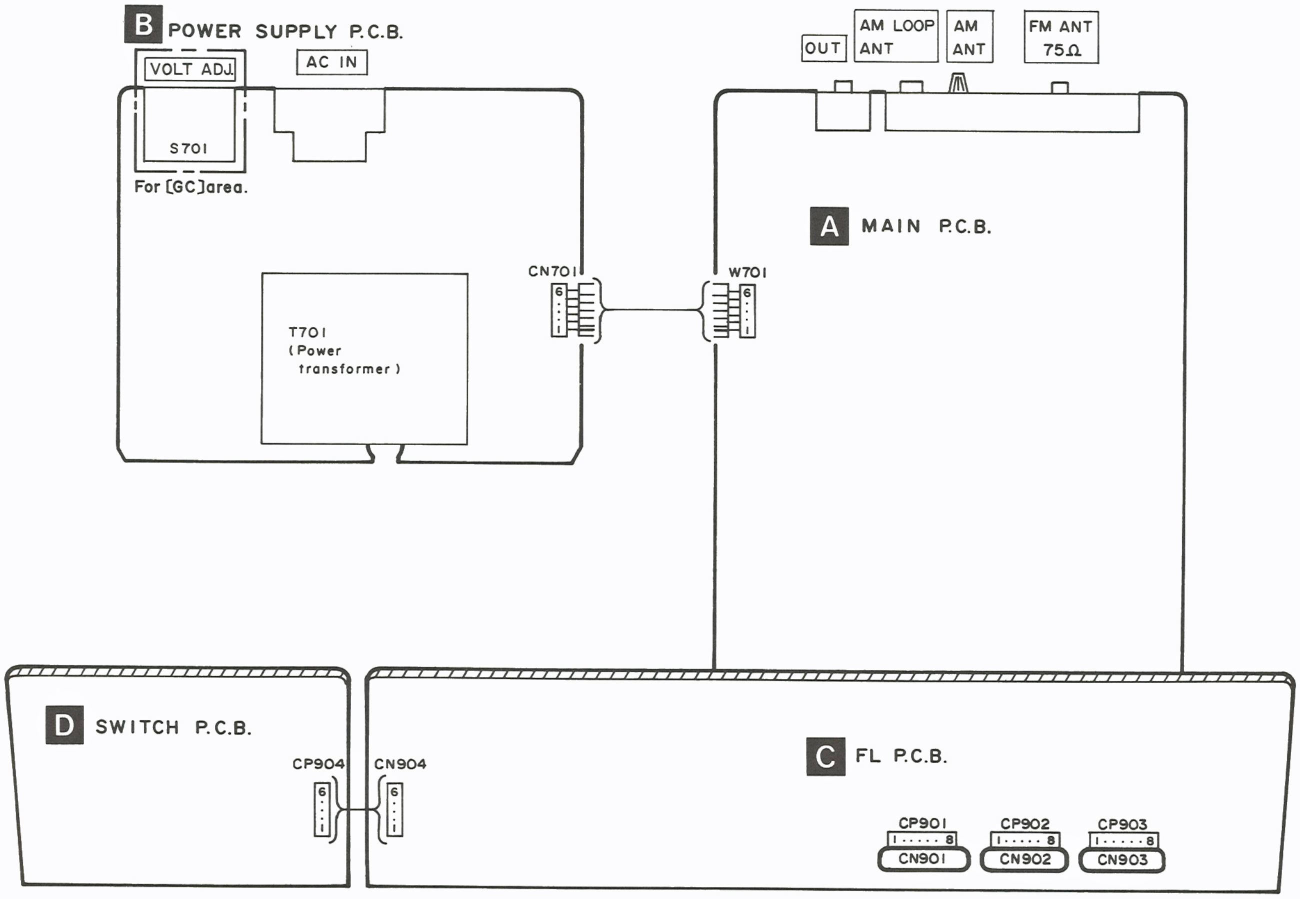
B POWER SUPPLY P.C.B.
For [E,EB,EG,GN] areas.
(REP1442A-P … [E,EB,EG]
REP1442B-P … [GN])


AC IN
(230-240V 50/60Hz)
JK701
L701
CN701
T701 (Power transformer)
F1 T400mA
FC704
FC703
0514B

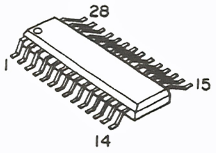
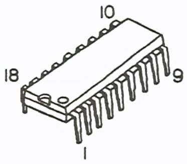
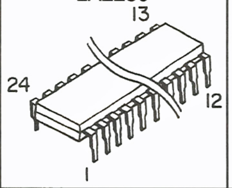
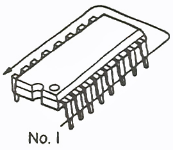
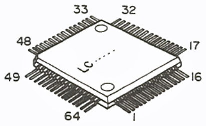
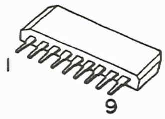
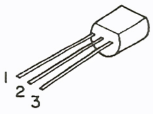
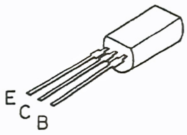
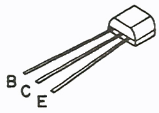
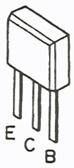
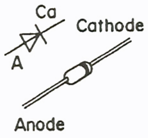
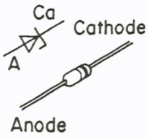
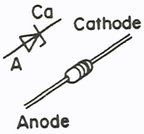
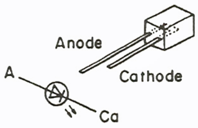
B POWER SUPPLY P.C.B.
For [GC] area.
(REP1442C-P)


AC IN
(110/127/220/240V 50/60Hz)
VOLT ADJ
127V
110V
220V
240V
S701
JK701
L701
CN701
T701 (Power transformer)
F1 T400mA
FC704
FC703
0514B

■ WIRING CONNECTION DIAGRAM


B POWER SUPPLY P.C.B.
VOLT ADJ.
AC IN
S701
For [GC]area.
T701 (Power transformer)
CN701
6
1
W701
OUT
AM LOOP ANT
AM ANT
FM ANT 75Ω
A MAIN P.C.B.
D SWITCH P.C.B.
CP904
CN904
C FL P.C.B.
CP901
CP902
CP903
1 8
CN901
CN902
CN903

●Terminal guide of IC's, transistors and diodes

AN7274NS AN7472S  	LC7073  	LA2230  	 AN6554F 14 Pin LM7001 16 Pin	LC8A012A5391 LC8A012A5376  33 32 48 17 49 16 64 1
AN278  	MN1381RTA  	2SC3940AQSTA  	2SC3327ABTP  	 2SA1309AQSTA 2SC2785FETA 2SC2786MTA 2SC3311AQSTA 2SD1450RSTTA UN4113TA UN4114TA UN4213TA
 Ca Cathode A Anode MA165TA 1SS291TA 1SR35200TB	MA4140MTA MA4270MTA  Ca Cathode A Anode	 Ca Cathode A Anode MA4056MTA MA4062MTA MA4082MTA MA4068LTA	LN873RP-C  Anode Cathode A Ca	

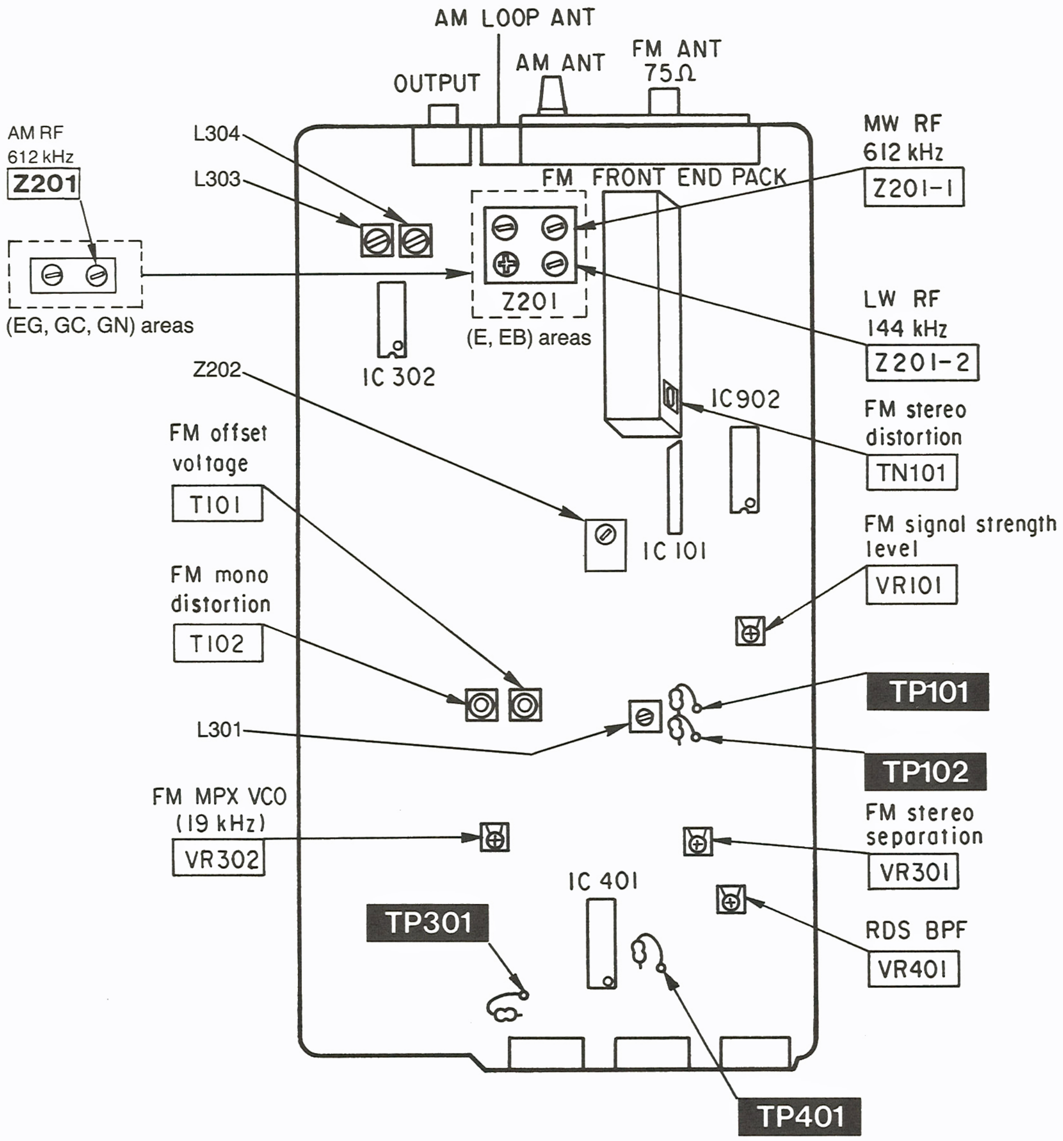
MEASUREMENTS AND ADJUSTMENTS

Equipment used

- FM signal generator (FM-SG)
- AM signal generator (AM-SG)
- Stereo modulator
- Distortion analyser
- RDS modulator
- Resistor (100 kΩ)
- Oscilloscope
- Choke coil (100 µH)
- Frequency counter
- AC and DC electronic voltmeter (EVM)
- 75Ω coaxial cable

Note: for **Z202**, **L301**, **L303** and **L304**, they are supplied as adjusted parts. So, do not turn the cores of the parts.

Adjustment points

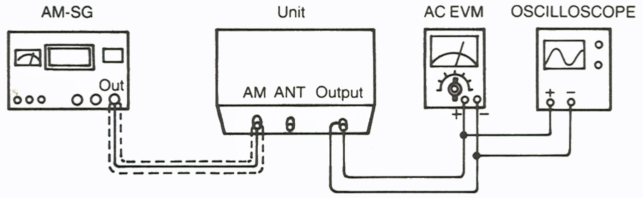

AM LOOP ANT
OUTPUT
AM ANT
FM ANT 75Ω
AM RF 612 kHz
Z201
L304
L303
FM FRONT END PACK
MW RF 612 kHz
Z201-1
(EG, GC, GN) areas
Z201
(E, EB) areas
IC 302
LW RF 144 kHz
Z201-2
Z202
IC902
FM stereo distortion
TN101
FM offset voltage
T101
IC 101
FM signal strength level
VR101
FM mono distortion
T102
TP101
L301
TP102
FM MPX VCO (19 kHz)
VR302
FM stereo separation
VR301
IC 401
TP301
RDS BPF
VR401
TP401

MW RF ADJUSTMENT [for (E) (EB) areas]

1. Test equipment connection is shown in figure.
2. Set the unit to **"MW"** mode.
3. Set the radio frequency display and signal generator to **612 kHz**.
4. Adjust **Z201-1** so that the output terminal is maximized.

AM SIGNAL GENERATOR CONDITION
Modulation 30%
Modulation frequency .... 400 Hz

Note:
Adjust the output from AM signal generator to a low level.

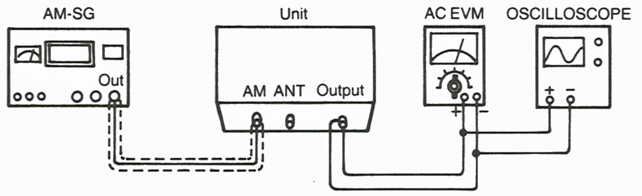

AM-SG
Out
Unit
AM ANT
Output
AC EVM
OSCILLOSCOPE

AM RF ADJUSTMENT [for (EG) (GC) (GN) areas]

1. Test equipment connection is shown in figure.
2. Set the unit to **"AM"** mode.
3. Set the radio frequency display and signal generator to **612 kHz**.
4. Adjust **Z201** so that the output terminal is maximized.

AM SIGNAL GENERATOR CONDITION
Modulation 30%
Modulation frequency .... 400 Hz

Note:
Adjust the output from AM signal generator to a low level.

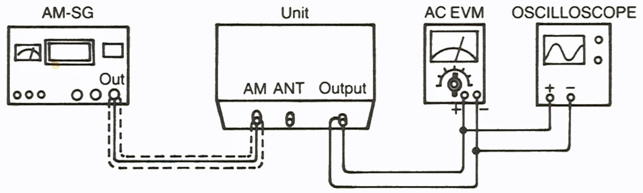

AM-SG
Out
Unit
AM ANT
Output
AC EVM
OSCILLOSCOPE

LW RF ADJUSTMENT [for (E) (EB) areas]

1. Test equipment connection is shown in figure.
2. Set the unit to **"LW"** mode.
3. Set the radio frequency display and signal generator to **144 kHz**.
4. Adjust **Z201-2** so that the output terminal is maximized.

AM SIGNAL GENERATOR CONDITION
Modulation 30%
Modulation frequency .... 400 Hz

Note:
Adjust the output from AM signal generator to a low level.


AM-SG
Out
Unit
AM ANT
Output
AC EVM
OSCILLOSCOPE

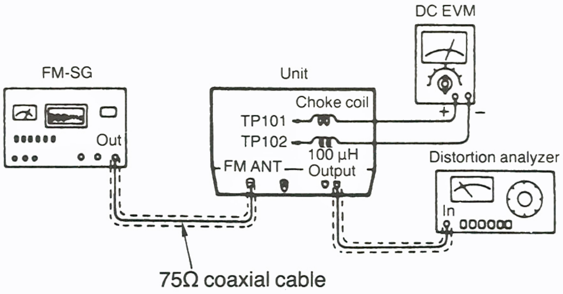
FM MONO DISTORTION/FM OFFSET VOLTAGE ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" and "**IF normal**" mode.
3. Set the radio frequency display and signal generator to **100.10 MHz**.
4. Adjust the core of **T101** so that the voltage measured in signal mode is **0 mV** (0±20 mV) in 300 mV range.
5. Adjust **T102** so that the distortion factor of L-CH is minimized.
6. Repeat steps 4 and 5.
7. Make sure that the distortion factors of L-CH and R-CH are nearly the same and minimum.

Note: The adjusting screwdriver used should be made of resin.

FM SIGNAL GENERATOR CONDITION

Modulation	100%
Modulation frequency	1 kHz
Output level	66 dB


DC EVM
FM-SG
Unit
Choke coil
TP101
TP102
100 µH
Out
FM ANT
Output
Distortion analyzer
In
75Ω coaxial cable

FM MPX VCO ADJUSTMENT

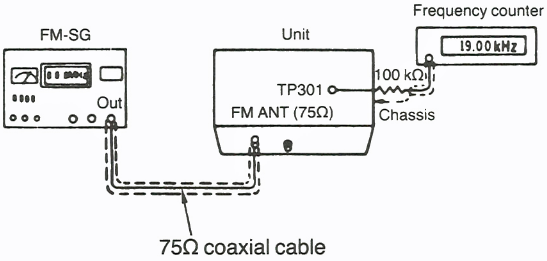
1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" and "**IF normal**" mode.
3. Set the radio frequency display and signal genarator to **100.50 MHz**.
4. Adjust **VR302** for **19 kHz±30 Hz** on frequency counter reading.

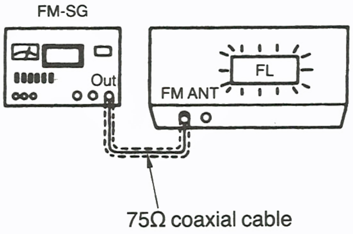
•USING ALTERNATE SYSTEM

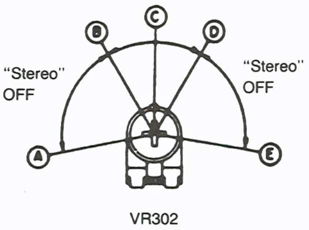
1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust **VR302** until stereo indicator lights up. Fix the arm of **VR302** as shown in figure.

FM SIGNAL GENERATOR CONDITION

Modulation	0%
Modulation frequency	0 kHz
Output level	66 dB


Frequency counter
19.00kHz
FM-SG
Unit
TP301
100 kΩ
Out
FM ANT (75Ω)
Chassis
75Ω coaxial cable


FM-SG
FL
Out
FM ANT
75Ω coaxial cable


Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓔ
"Stereo" OFF
"Stereo" OFF
VR302

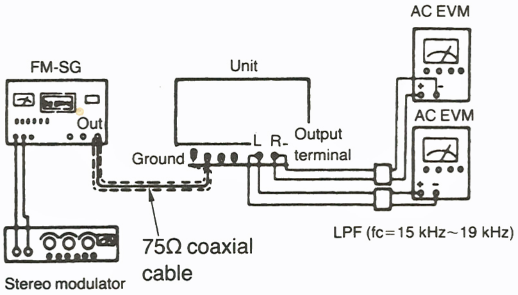
Ⓐ~Ⓑ, Ⓓ~Ⓔ	"Stereo" OFF position
Ⓑ~Ⓓ	"Stereo" ON position (Indicator lighting)
Ⓒ	Adjust point of pilot circuit

FM STEREO SEPARATION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" mode.
3. Set the radio frequency display and signal generator to **100.20 MHz**.
4. Adjust **VR301** so that the R-CH output is minimized when stereo modulator is in "L" (L-CH modulation) mode.

FM SIGNAL GENERATOR CONDITION

Modulation	Stereo "L" mode or "R" mode 90%, Pilot 10%
Modulation frequency	1 kHz (Pilot 19 kHz)
Output level	66 dB


AC EVM
FM-SG
Unit
AC EVM
Out
L
R
Output terminal
Ground
LPF (fc=15 kHz~19 kHz)
75Ω coaxial cable
Stereo modulator

FM SIGNAL STRENGTH LEVEL ADJUSTMENT

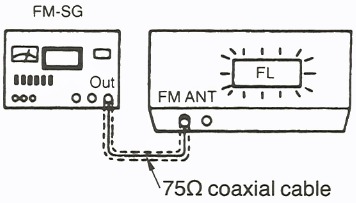
1. Test equipment connection is shown in figure.
2. Set the unit to **"FM"** and **"IF normal"** mode.
3. Set the radio frequency display and signal generator to **100.50 MHz**.
4. Change FL display from "frequency" to "dB" by pressing the FM signal button.
5. Adjust **VR101** so that **54 dB** is indicated. **"54 dB"** is indicated on the FL display.
6. Repeat steps 4, 5.

FM SIGNAL GENERATOR CONDITION

Modulation 30%

Modulation frequency .... 1 kHz

Output level .... 60 dB


FM-SG
Out
FL
FM ANT
75Ω coaxial cable

FM STEREO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to **"FM"** mode.
3. Set the radio frequency display and signal generator to **100.10 MHz**.
4. Adjust **TN101** so that the distortion factor of L-CH is minimized.
5. Make sure that the distortion factors of L-CH and R-CH are nearly the same and minimum.

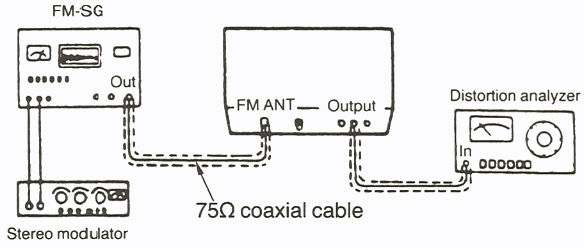
Note: The adjusting screwdriver used should be made of resin.

FM SIGNAL GENERATOR CONDITION

Modulation .... "L" mode or "R" mode 90%, Pilot 10%

Modulation frequency .... 1 kHz (Pilot 19 kHz)

Output level .... 66 dB


FM-SG
Out
FM ANT
Output
Distortion analyzer
In
75Ω coaxial cable
Stereo modulator

Output mode...L or R

RDS (Radio data system) BPF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to **"FM"** mode.
3. Set the radio frequency display and signal generator to **100.10 MHz**.
4. Adjust **VR401** so that the **TP401** output is maximized.

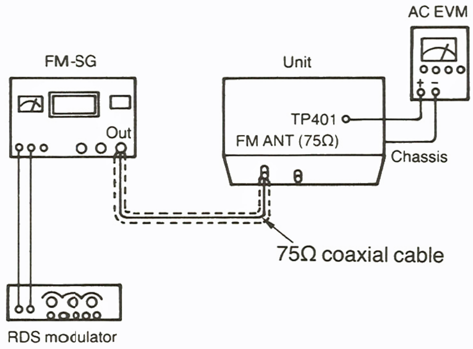
FM SIGNAL GENERATOR CONDITION

Modulation 100%

Modulation frequency .... 1 kHz

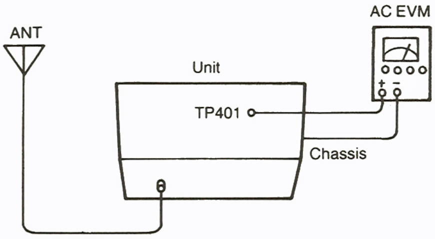
RDS modulation 2.7%

Output level .... 66 dB


AC EVM
FM-SG
Unit
TP401
FM ANT (75Ω)
Out
Chassis
75Ω coaxial cable
RDS modulator

How to make simple adjustment without using a RDS modulator

1. Tune into a FM broadcast with a RDS signal transmitted from a FM station whose electric field intensity is more than **50 dB**.
2. Adjust **VR401** to increase a bi-phase signal to a maximum.

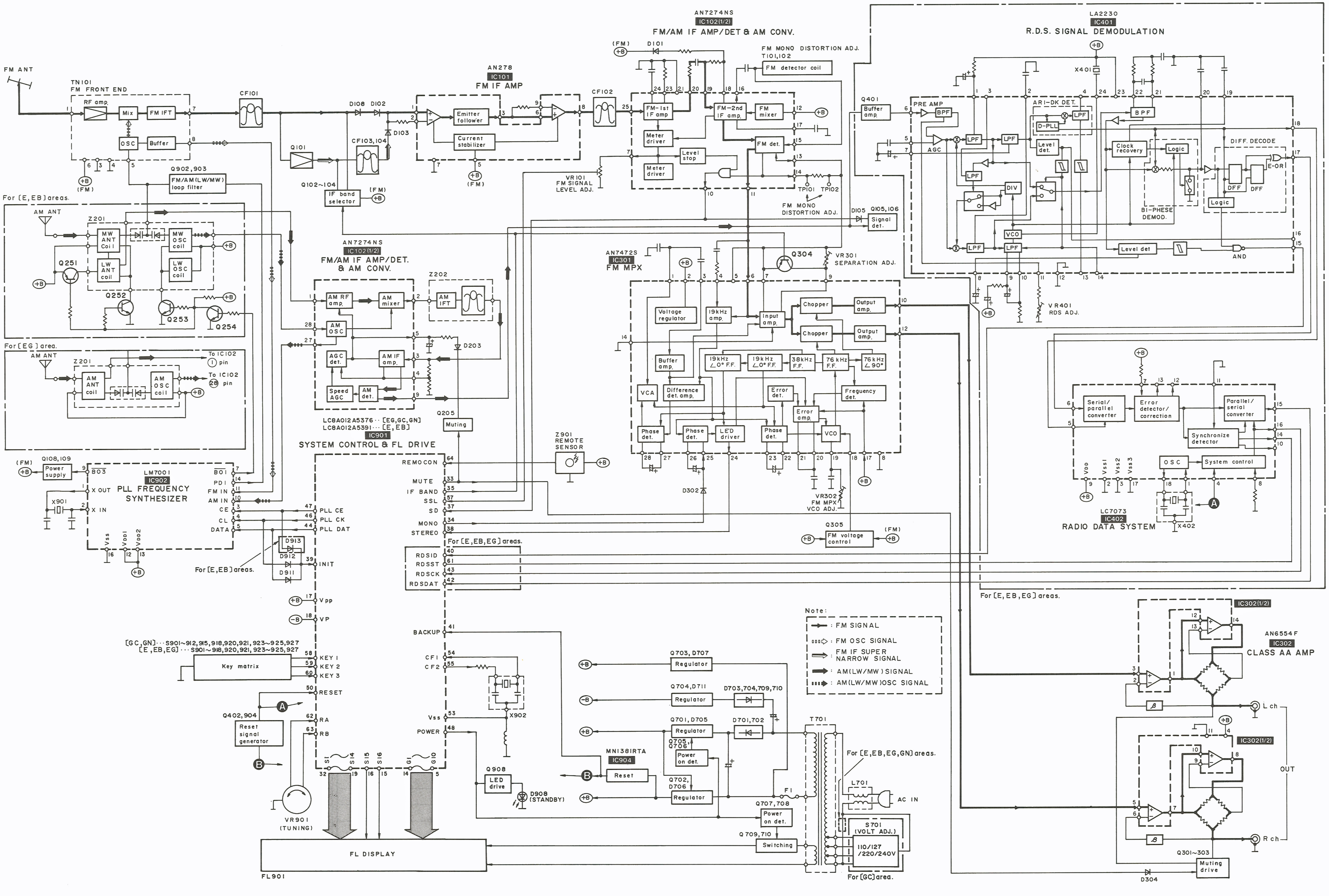

ANT
AC EVM
Unit
TP401
Chassis

■ FUNCTIONS OF IC TERMINALS

●IC901 (LC8A012A5391/LC8A012A5376)

Pin No.	Terminal Name	I/O	Function
1	No use	—	———
2	No use	—	———
3	No use	—	———
4	No use	—	———
5 ≀ 14	G10 ≀ G1	O	Grid signal output
15 • 16	S16 • S15	O	Segment signal output
17	VPP	—	Power supply for FL (+5 V)
18	VP	—	Power supply for FL (−VP)
19 ≀ 32	S14 ≀ S1	O	Segment signal output
33	MUTE	O	Muting signal output
34	MONO	O	Forcible monaural select signal output
35	IF BAND	O	IF BAND select signal output H: NARROW L: NORMAL
36	No use	—	———
37	SD	I	Station detector signal input
38	STEREO	I	Stereo signal input
39	INIT	I	Initial setting signal input
40	RDSID	I	RDSID signal input
41	BACK UP	I	Power failure detect signal input
42	RDSDAT	I	RDS data input
43	RDSCK	I	RDS clock input
44	PLL DAT	O	Serial data output
45	No use	—	———
46	PLL CK	O	Serial clock signal output
47	PLL CE	O	LM7001 chip enable signal output
48	POWER	O	Power control signal output
49	No use	—	———
50	RESET	I	Reset signal input
51	XT1	I	Connected to V_{DD}
52	No use	—	———
53	V_{SS}	—	Connected to GND
54	CF1	I	Connecting terminal for ceramic filter
55	CF2	O	
56	V_{DD}	I	Power supply (+5 V)
57	SSL	I	Tuning level signal input
58 ≀ 60	KEY 1 ≀ KEY 3	I	Key matrix signal input
61	RDS ST	I	RDS data start signal input
62	RA	I	Rotary encoda A signal input
63	RB	I	Rotary encoda B signal input
64	REMOCON	I	Remote control signal input

■ BLOCK DIAGRAM


FM ANT
TN101
FM FRONT END
RF amp.
Mix
FM IFT
OSC
Buffer
CF101
D108 D102
D103
CF103,104
Q101
Q102~104
IF band selector
AN278
IC101
FM IF AMP
Emitter follower
Current stabilizer
CF102
AN7274NS
IC102(1/2)
FM/AM IF AMP/DET & AM CONV.
D101
FM MONO DISTORTION ADJ.
T101,102
FM detector coil
FM-1st IF amp
FM-2nd IF amp.
FM mixer
Meter driver
Level stop
FM det.
VR101
FM SIGNAL LEVEL ADJ.
TP101 TP102
FM MONO DISTORTION ADJ.
D105 Q105,106
Signal det.
Q902,903
FM/AM(LW/MW) loop filter
For [E,EB] areas.
AM ANT
Z201
MW ANT Coil
MW OSC coil
LW ANT coil
LW OSC coil
Q251
Q252
Q253
Q254
For [EG] area.
AM ANT
Z201
AM ANT coil
AM OSC coil
To IC102 ① pin
To IC102 ㉘ pin
AN7274NS
IC102(1/2)
FM/AM IF AMP/DET. & AM CONV.
AM RF amp.
AM mixer
AM OSC
AGC det.
AM IF amp.
Speed AGC
AM det.
Z202
AM IFT
D203
Q205
Muting
LC8A012A5376 ·· [EG,GC,GN]
LC8A012A5391 ··· [E,EB]
IC901
SYSTEM CONTROL & FL DRIVE
Q108,109
Power supply
LM7001
IC902
PLL FREQUENCY SYNTHESIZER
X OUT
X IN
X901
BO3
BO1
PDI
FM IN
AM IN
CE
CL
DATA
Vss
VDD1
VDD2
PLL CE
PLL CK
PLL DAT
D913
D912
D911
INIT
For [E,EB] areas.
Vpp
VP
[GC,GN] ··· S901~912,915,918,920,921,923~925,927
[E,EB,EG] ··· S901~918,920,921,923~925,927
Key matrix
KEY 1
KEY 2
KEY 3
RESET
Q402,904
Reset signal generator
RA
RB
VR901 (TUNING)
FL DISPLAY
FL901
REMOCON
MUTE
IF BAND
SSL
SD
MONO
STEREO
For [E,EB,EG] areas.
RDSID
RDSST
RDSCK
RDSDAT
BACKUP
CF1
CF2
X902
Vss
POWER
Z901
REMOTE SENSOR
Q908
LED drive
D908 (STANDBY)
MN1381RTA
IC904
Reset
Q703,D707
Regulator
Q704,D711
Regulator
D703,704,709,710
Q701,D705
Regulator
D701,702
Q705,Q706
Power on det.
Q702,D706
Regulator
Q707,708
Power on det.
Q709,710
Switching
T701
F1
For [E,EB,EG,GN] areas.
L701
AC IN
S701 (VOLT ADJ.)
110/127 /220/240V
For [GC] area.
AN7472S
IC301
FM MPX
Q304
VR301
SEPARATION ADJ.
Voltage regulator
19kHz amp.
Input amp.
Chopper
Output amp.
Chopper
Output amp.
Buffer amp.
19kHz ∠0° F.F.
19kHz ∠0° F.F.
38kHz F.F.
76kHz F.F.
76kHz ∠90°
VCA
Difference det. amp.
Error det.
Frequency det.
Error amp.
Phase det.
Phase det.
LED driver
Phase det.
VCO
D302
VR302
FM MPX VCO ADJ.
Q305
FM voltage control
LA2230
IC401
R.D.S. SIGNAL DEMODULATION
X401
Q401
Buffer amp.
PRE AMP
BPF
AGC
LPF
ARI-DK DET.
D-PLL
Level det.
Clock recovery
Logic
DIFF. DECODE
E-OR
DFF
DFF
Logic
BI-PHESE DEMOD.
DIV
VCO
LPF
Level det
AND
VR401
RDS ADJ.
Serial/parallel converter
Error detector/correction
Parallel/serial converter
Synchronize detector
OSC
System control
VDD
Vss1
Vss2
Vss3
LC7073
IC402
RADIO DATA SYSTEM
X402
For [E,EB,EG] areas.
IC302(1/2)
AN6554F
IC302
CLASS AA AMP
L ch
R ch
OUT
IC302(1/2)
Q301~303
Muting drive
D304
Note:
: FM SIGNAL
: FM OSC SIGNAL
: FM IF SUPER NARROW SIGNAL
: AM(LW/MW) SIGNAL
: AM(LW/MW)OSC SIGNAL

■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC101	AN278	I. C, FM IF AMP.	
IC102	AN7274NS	I. C, FM/AM IF AMP. &DET.	
IC301	AN7472S	I. C, FM MPX	
IC302	AN6554F	I. C, CLASS AA AMP.	
IC401	LA2230	I. C, RDS SIGNAL DEMODULATION	(E, EB, EG)
IC402	LC7073	I. C, RADIO DATA SYSTEM	(E, EB, EG)
IC901	LC8A012A5391	I. C, SYSTEM CONTROL	(E, EB)
IC901	LC8A012A5376	I. C, SYSTEM CONTROL	(EG, GC, GN)
IC902	LM7001	I. C, PLL FREQ. SYNTHESIZER	
IC904	MN1381RTA	I. C, RESET	
		TRANSISTOR(S)	
Q101	2SC2786M	TRANSISTOR	
Q102, 103	UN4113TA	TRANSISTOR	
Q104	UN4213	TRANSISTOR	
Q105, 106	2SC3311A-Q	TRANSISTOR	
Q108	UN4114TA	TRANSISTOR	
Q109	2SC3311A-Q	TRANSISTOR	
Q205	UN4213	TRANSISTOR	
Q251	2SA1309A-R	TRANSISTOR	(E, EB)
Q252	2SD1450RTA	TRANSISTOR	(E, EB)
Q253, 254	2SC3311A-Q	TRANSISTOR	(E, EB)
Q301, 302	2SD1450RTA	TRANSISTOR	
Q303, 304	2SA1309A-R	TRANSISTOR	
Q305	UN4113TA	TRANSISTOR	
Q401	2SA1309A-R	TRANSISTOR	(E, EB, EG)
Q402	UN4213	TRANSISTOR	(E, EB, EG)
Q701-703	2SC3940AQSTA	TRANSISTOR	⚠
Q704	2SA1309A-R	TRANSISTOR	⚠
Q705	UN4114TA	TRANSISTOR	
Q706, 707	UN4213	TRANSISTOR	
Q708	UN4114TA	TRANSISTOR	
Q709, 710	2SC3327-A	TRANSISTOR	
Q902, 903	2SC2785FE	TRANSISTOR	
Q904	UN4213	TRANSISTOR	
Q908	UN4114TA	TRANSISTOR	
		DIODE(S)	
D101-103	MA165	DIODE	
D105-108	MA165	DIODE	
D202	MA165	DIODE	(EG, GC, GN)
D203	MA165	DIODE	
D301	MA4082MTA	DIODE	⚠
D302	MA165	DIODE	
D303	MA4062MTA	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D304	MA165	DIODE	
D701, 702	1SR35200TB	DIODE	⚠
D703, 704	MA165	DIODE	⚠
D705	MA4140M	DIODE	⚠
D706	MA4062MTA	DIODE	⚠
D707	MA4068L	DIODE	⚠
D708	MA165	DIODE	
D709, 710	MA165	DIODE	⚠
D711	MA4270	DIODE	⚠
D714, 715	MA165	DIODE	
D901	1SS291TA	DIODE	
D902, 903	MA165	DIODE	
D904	MA4056MTA	DIODE	⚠
D908	LN873RP-C	LED	
D909-912	MA165	DIODE	
D913	MA165	DIODE	(E, EB)
D914	MA165	DIODE	(GC, GN)
D916, 917	MA165	DIODE	
D918, 919	MA4056MTA	DIODE	
D927	MA4062MTA	DIODE	
		VARIABLE RESISTOR(S)	
VR101	EVNDXAA00B15	V. R, FM SIGNAL LEVEL ADJ.	
VR301	EVNDXAA00B15	V. R, FM STEREO SEPARATION	
VR302	EVNDXAA00B14	V. R, FM MPX VCO ADJ.	
VR401	EVNDXAA00B14	V. R, RDS ADJ.	(E, EB, EG)
VR901	RRVEC16B12-A	V. R, TUNING CONTROL	
		CERAMIC FILTER(S)	
CF101	RLFFETNGA01L	CERAMIC FILTER	[RED]
CF101	RLFFETNGB01L	CERAMIC FILTER	[BLUE]
CF101	RLFFETNGC01L	CERAMIC FILTER	[ORANGE]
CF102	RLFFETNGA02L	CERAMIC FILTER	[RED]
CF102	RLFFETNGB02L	CERAMIC FILTER	[BLUE]
CF102	RLFFETNGC02L	CERAMIC FILTER	[ORANGE]
CF103, 104	RLFFETNGA01L	CERAMIC FILTER	[RED] (E, EG, GC, GN)
CF103, 104	RLFFETNGB01L	CERAMIC FILTER	[BLUE] (E, EG, GC, GN)
CF103, 104	RLFFETNGC01L	CERAMIC FILTER	[ORANGE] (E, EG, GC, GN)
CF103, 104	SVFE107MZ2-A	CERAMIC FILTER	(EB)
		THERMISTOR(S)	
TH101	ERTD2ZHL332T	THERMISTOR	
		COMPONENT COMBINATION(S)	
TN101	ENV17290G1	FM FRONT END	
Z201	RLA2Z001-T	COMPONENT COMBINATION	(EG, GC, GN)
Z201	RLA6Z002-T	COMPONENT COMBINATION	(E, EB)

Ref. No.	Part No.	Part Name & Description	Remarks
Z202	RLI2Z002-W	COMPONENT COMBINATION	
Z901	RCDHC-278	REMOTE SENSOR	
		COIL(S)	
L201, 202	ELESNR68MA	COIL	(EG, GC, GN)
L201, 202	ELESNR22MA	COIL	(E, EB)
L301	SLM1B10M-1M	COIL	
L303, 304	RLM2B003-K	COIL	
L305, 306	ELEXT3R3KA9	COIL	
L307	ELEXT101KA9	COIL	
L403	ELEXT101KA9	COIL	(E, EB, EG)
L701	RLQZ600M-W	COIL	⚠
L702, 703	ELEXT3R3KA9	COIL	
L902	ELEXT3R3KA9	COIL	
L903	ELEXTR22MA9	COIL	
L907, 908	ELEXT101KA9	COIL	
L911	ELEXT101KA9	COIL	
L916	ELEXTR22MA9	COIL	
L917	ELEXT3R3KA9	COIL	
L919	ELEXT3R3KA9	COIL	
		TRANSFORMER(S)	
T101	RLI4B005-Z	TRANSFORMER	
T102	RLI4B006-Z	TRANSFORMER	
T701	RTP1K4E022	POWER TRANSFORMER	⚠(E, EB, EG, GN)
T701	RTP1K4E024	POWER TRANSFORMER	⚠(GC)
		OSCILLATOR(S)	
X401	RSXZ456KM07	OSCILLATOR(456KHz)	(E, EB, EG)
X402	RVBCST4R00MT	OSCILLATOR(4MHz)	(E, EB, EG)
X901	SVQ49U722-S	OSCILLATOR(7.2MHz)	
X902	EF0EC6004T4	OSCILLATOR(6MHz)	
		DISPLAY	
FL901	RSL0154-F	FL DISPLAY	
		SWITCH(ES)	
S701	SSR187-1	SW, VOLTAGE SELECTOR	⚠(GC)
S901	EVQ21405R	SW, POWER	
S902	EVQ21405R	SW, PRESET-TUNING(9)	
S903	EVQ21405R	SW, TUNING MODE	
S904	EVQ21405R	SW, IF BAND/DISP MODE	
S905	EVQ21405R	SW, PRESET-TUNING(0)	
S906	EVQ21405R	SW, PRESET-TUNING(1)	
S907	EVQ21405R	SW, PTY SELECTOR/SIGNAL	
S908	EVQ21405R	SW, PRESET-TUNING(≥10)	
S909	EVQ21405R	SW, PRESET-TUNING(2).	
S910	EVQ21405R	SW, SEARCH/MODE	
S911	EVQ21405R	SW, -BAND	
S912	EVQ21405R	SW, PRESET-TUNING(3)	
S913	EVQ21405R	SW, TP SEARCH	(E, EB, EG)
S914	EVQ21405R	SW, SIGNAL	(E, EB, EG)

Ref. No.	Part No.	Part Name & Description	Remarks
S915	EVQ21405R	SW, PRESET-TUNING(4)	
S916	EVQ21405R	SW, IF BAND	(E, EB, EG)
S917	EVQ21405R	SW, FM MODE	(E, EB, EG)
S918	EVQ21405R	SW, PRESET-TUNING(5)	
S920	EVQ21405R	SW, MEMORY	
S921	EVQ21405R	SW, PRESET-TUNING(6)	
S923	EVQ21405R	SW, PRESET DOWN	
S924	EVQ21405R	SW, PRESET-TUNING(7)	
S925	EVQ21405R	SW, PRESET UP	
S927	EVQ21405R	SW, PRESET-TUNING(8)	
		CONNECTOR(S)	
CN701	SJT30643-V	CONNECTOR(6P)	
CN901-903	RJU003K008M1	SOCKET(8P)	
CN904	SJS50682JQH	SOCKET(6P)	
CP901-903	RJT003K008-1	CONNECTOR(8P)	
CP904	SJT30645JQ	CONNECTOR(6P)	
		EARTH TERMINAL(S)	
E101	SNE1004-1	GND PLATE	
E701	SNE1004-1	GND PLATE	
		FUSE HOLDER(S)	
FC703, 704	EYF52BC	FUSE HOLDER	
		FUSE	
F1	XBA2C04TB0	FUSE, 250V T400mA	⚠
		JACK(S)	
JK101	RJH4202M	ANTENNA TERMINAL	
JK301	SJF3068-5N	OUTPUT TERMINAL	
JK701	SJS9236	AC INLET	⚠(E, EB, EG, GC)
JK701	SJSD16	AC INLET	⚠(GN)
		TEST POINT(S)	
TP101	ERD25V0R00T	TEST POINT	
TP102	ERD25V0R00T	TEST POINT	
TP301	ERD25V0R00T	TEST POINT	
TP401	ERD25V0R00T	TEST POINT	(E, EB, EG)

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R101	ERDS2TJ102	1/4W 1K
R102, 103	ERDS2TJ561	1/4W 560
R104	ERDS2TJ331	1/4W 330
R105	ERDS2TJ152	1/4W 1.5K
R106	ERDS2TJ392T	1/4W 3.9K
R107	ERDS2TJ221	1/4W 220
R108	ERDS2TJ104	1/4W 100K
R109	ERDS2TJ101	1/4W 100
R110	ERDS2TJ822	1/4W 8.2K
R112	ERDS2TJ333	1/4W 33K
R113	ERDS2TJ182	1/4W 1.8K
R114	ERDS2TJ152	1/4W 1.5K
R115	ERDS2TJ471	1/4W 470
R116	ERDS2TJ103	1/4W 10K
R117	ERDS2TJ682T	1/4W 6.8K
R118	ERDS2TJ472	1/4W 4.7K
R119	ERDS2TJ102	1/4W 1K
R120	ERDS2TJ331	1/4W 330
R121	ERDS2TJ102	1/4W 1K
R125	ERDS2TJ332	1/4W 3.3K
R126	ERDS2TJ104	1/4W 100K
R128	ERDS2TJ563	1/4W 56K
R129	ERDS2TJ564	1/4W 560K
R130	ERDS2TJ331	1/4W 330
R131	ERDS2TJ222	1/4W 2.2K
R132	ERDS2TJ563	1/4W 56K
R133	ERDS2TJ684	1/4W 680K
R134	ERDS2TJ820	1/4W 82 E, EG, GC, GN
R134	ERDS2TJ2R7T	1/4W 2.7 EB
R202	ERDS2TJ822	1/4W 8.2K
R203	ERDS2TJ104	1/4W 100K
R204	ERDS2TJ122	1/4W 1.2K E, EB
R204	ERDS2TJ103	1/4W 10K EG, GC, GN
R205	ERDS2TJ222	1/4W 2.2K
R206	ERDS2TJ473	1/4W 47K
R207	ERDS2TJ563	1/4W 56K
R208	ERDS2TJ124T	1/4W 120K
R209	ERDS2TJ274	1/4W 270K
R210	ERDS2TJ222	1/4W 2.2K
R211	ERDS2TJ101	1/4W 100
R212	ERDS2TJ473	1/4W 47K
R213	ERDS2TJ223	1/4W 22K
R251	ERDS2TJ472	1/4W 4.7K E, EB
R252	ERDS2TJ103	1/4W 10K E, EB
R253	ERDS2TJ223	1/4W 22K E, EB
R254	ERDS2TJ822	1/4W 8.2K E, EB

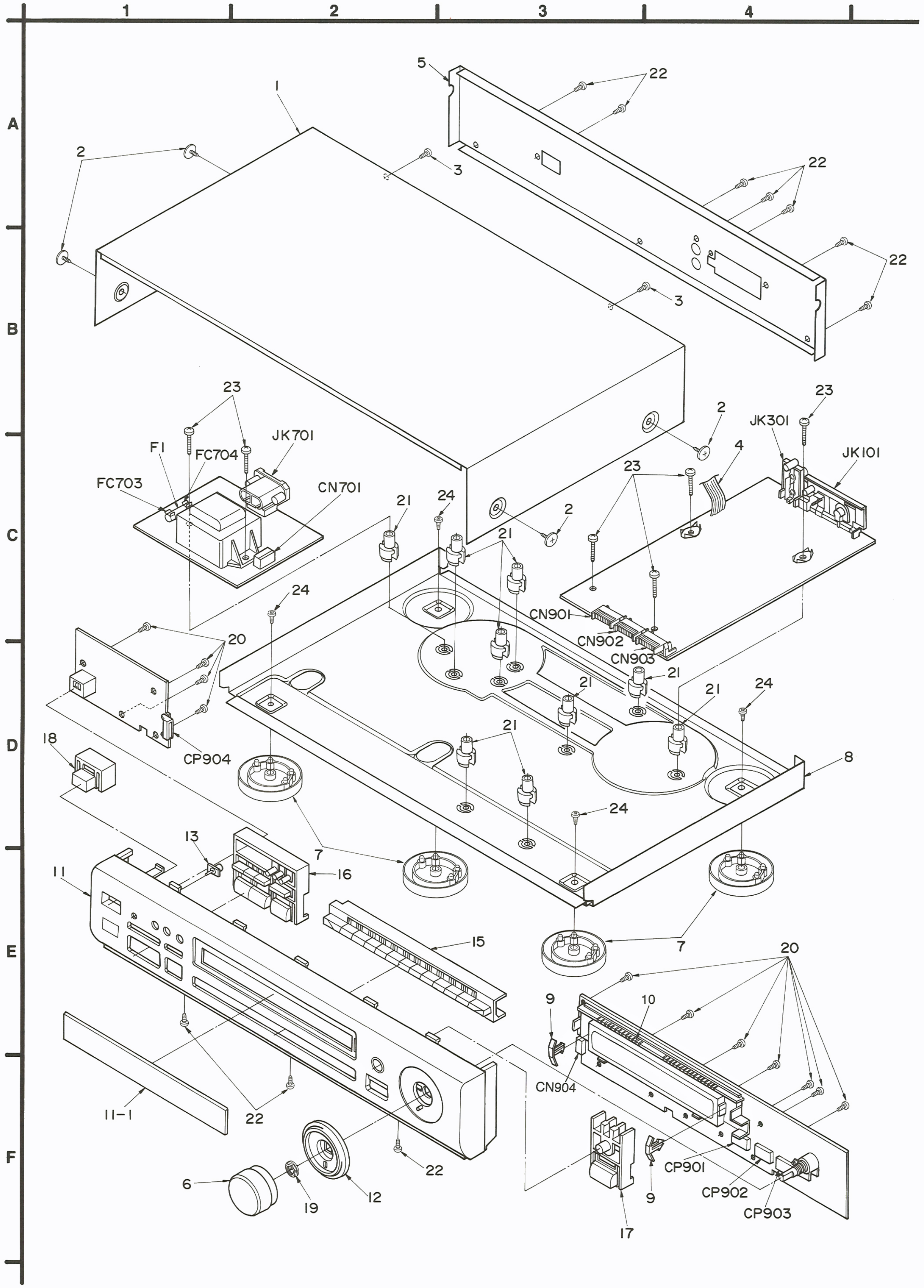
Ref. No.	Part No.	Values & Remarks
R255	ERDS2TJ473	1/4W 47K E, EB
R256	ERDS2TJ821	1/4W 820 E, EB
R301	ERDS2TJ683	1/4W 68K
R302	ERDS2TJ393	1/4W 39K E, EB, GC, GN
R302	ERDS2TJ183T	1/4W 18K EG
R303	ERDS2TJ564	1/4W 560K
R305, 306	ERDS2TJ823T	1/4W 82K
R307	ERDS2TJ274	1/4W 270K
R309	ERDS2TJ274	1/4W 270K
R310	ERDS2TJ102	1/4W 1K
R311	ERDS2TJ123	1/4W 12K
R312, 313	ERDS2TJ393	1/4W 39K
R315, 316	ERDS2TJ222	1/4W 2.2K
R317, 318	ERDS2TJ223	1/4W 22K
R319, 320	ERDS2TJ101	1/4W 100
R321, 322	ERDS2TJ331	1/4W 330
R323, 324	ERDS2TJ332	1/4W 3.3K
R325, 326	ERDS2TJ102	1/4W 1K
R327, 328	ERDS2TJ272T	1/4W 2.7K
R329, 330	ERDS2TJ562	1/4W 5.6K
R331	ERDS2TJ333	1/4W 33K
R332	ERDS2TJ102	1/4W 1K
R333	ERDS2TJ104	1/4W 100K
R334	ERDS2TJ561	1/4W 560
R338	ERDS2TJ274	1/4W 270K
R339	ERDS2TJ473	1/4W 47K
R340	ERDS2TJ333	1/4W 33K
R401	ERDS2TJ564	1/4W 560K E, EB, EG
R402	ERDS2TJ332	1/4W 3.3K E, EB, EG
R403	ERDS2TJ125	1/4W 1.2M E, EB, EG
R404	ERDS2TJ102	1/4W 1K E, EB, EG
R405	ERDS2TJ332	1/4W 3.3K E, EB, EG
R406	ERDS2TJ103	1/4W 10K E, EB, EG
R407	ERDS2TJ223	1/4W 22K E, EB, EG
R408	ERDS2TJ103	1/4W 10K
R409	ERDS2TJ472	1/4W 4.7K E, EB, EG
R410	ERDS2TJ102	1/4W 1K E, EB, EG
R412, 413	ERDS2TJ103	1/4W 10K E, EB, EG
R701	ERDS2TJ102	1/4W 1K
R702	ERDS2TJ221	1/4W 220
R703	ERDS2TJ222	1/4W 2.2K
R706	ERDS2TJ222	1/4W 2.2K
R708, 709	ERDS2TJ472	1/4W 4.7K
R711	ERDS2TJ103	1/4W 10K
R712	ERDS1FVJ470T	1/2W 47 ⚠
R903	ERDS2TJ562	1/4W 5.6K
R904	ERDS2TJ561	1/4W 560
R906	ERDS2TJ103	1/4W 10K
R912	ERDS2TJ102	1/4W 1K

Ref. No.	Part No.	Values & Remarks
R921	ERDS2TJ102	1/4W 1K
R922	ERDS2TJ104	1/4W 100K
R923	ERDS2TJ102	1/4W 1K
R928	ERDS2EJ121	1/4W 120
R929, 930	ERDS2TJ103	1/4W 10K
R931, 932	ERDS2TJ104	1/4W 100K
R933	ERDS2TJ221	1/4W 220
R934-936	ERDS2TJ102	1/4W 1K
R937-939	ERDS2TJ103	1/4W 10K
R940	ERDS2TJ102	1/4W 1K
R941	ERDS2TJ122	1/4W 1.2K E, EB, EG
R941	ERDS2TJ103	1/4W 10K GC, GN
R942, 943	ERDS2TJ122	1/4W 1.2K
R944	ERDS2TJ152	1/4W 1.5K E, EB, EG
R945, 946	ERDS2TJ152	1/4W 1.5K
R947	ERDS2TJ182	1/4W 1.8K E, EB, EG
R948, 949	ERDS2TJ182	1/4W 1.8K
R950	ERDS2TJ222	1/4W 2.2K E, EB, EG
R951, 952	ERDS2TJ222	1/4W 2.2K
R953	ERDS2TJ332	1/4W 3.3K E, EB, EG
R954, 955	ERDS2TJ332	1/4W 3.3K
R957, 958	ERDS2TJ472	1/4W 4.7K
R960, 961	ERDS2TJ682T	1/4W 6.8K
R962, 963	ERDS2TJ123	1/4W 12K
R964, 965	ERDS2TJ181T	1/4W 180
R968	ERDS2TJ104	1/4W 100K
R969-972	ERDS2TJ472	1/4W 4.7K
R973, 974	ERDS2TJ472	1/4W 4.7K E, EB, EG
R975, 976	ERDS2TJ472	1/4W 4.7K
R978-982	ERDS2TJ472	1/4W 4.7K
R983	ERDS2TJ102	1/4W 1K
R984	ERDS2TJ272T	1/4W 2.7K
R985	ERDS2TJ182	1/4W 1.8K
R986-988	ERDS2TJ103	1/4W 10K GC, GN
R989, 990	ERDS2TJ2R2T	1/4W 2.2
R991	ERDS2TJ103	1/4W 10K E, EB
		CAPACITORS
C2	ECBT1E223ZF	25V 0.022U
C3	ECBT1E103ZF	25V 0.01U
C4	ECEA1CKA100B	16V 10U
C101-104	ECBT1E103ZF	25V 0.01U
C105	ECQV1H473JM3	50V 0.047U
C106	ECA0JM471B	6.3V 470U
C107	ECQB1H102JF3	50V 1000P
C108	ECBT1H180JC5	50V 18P
C109	ECBT1H102KB5	50V 1000P
C110, 111	ECKR1H103ZF5	50V 0.01U

Ref. No.	Part No.	Values & Remarks
C112	ECBT1H6R8KC5	50V 6.8P
C113	ECBT1H102KB5	50V 1000P
C114	ECA1VM101B	35V 100U
C115	ECQV1H104JM3	50V 0.1U
C116	ECBT1H101KB5	50V 100P
C117	ECEA1HKAR22B	50V 0.22U
C118	ECEA1AKA101B	10V 100U
C119	ECQB1H223JF3	50V 0.022U
C122-126	ECBT1E103ZF	25V 0.01U
C127	ECBT1H180JC5	50V 18P
C128	ECBT1H390J5	50V 39P
C129, 130	ECBT1H102KB5	50V 1000P
C152	ECQV1H104JM3	50V 0.1U
C201	ECQV1H473JM3	50V 0.047U
C202	ECBT1E223ZF	25V 0.022U
C203	ECBT1H120JC5	50V 12P E, EB
C203	ECBT1H8R2JC5	50V 8.2P EG, GC, GN
C204	ECFR1E223KR	25V 0.022U
C205	ECBT1H102KB5	50V 1000P
C206	ECBT1H120JC5	50V 12P
C208, 209	ECBT1E103ZF	25V 0.01U
C210	ECEA1AKA330B	10V 33U
C211	ECKR1H103ZF5	50V 0.01U
C212	ECEA1HKAR47B	50V 0.47U
C213	ECEA1AKA330B	10V 33U
C214, 215	ECFR1E223KR	25V 0.022U
C216	ECEA1AKA101B	10V 100U
C252	ECBT1H120JC5	50V 12P E, EB
C301	ECFR1E332KR	25V 3300P
C302	ECFR1E103KR	25V 0.01U
C303	ECEA1AKA101B	10V 100U
C304	ECQV1H104JM3	50V 0.1U
C306	ECEA1CKA100B	16V 10U
C307, 308	ECQB1H153JF3	50V 0.015U
C309	ECEA1HKAR22B	50V 0.22U
C310	ECEA1HKAR47B	50V 0.47U
C311	ECEA1HKAR22B	50V 0.22U
C312	ECFR1E223KR	25V 0.022U
C313	ECQP1391JZ	50V 390P
C315, 316	ECEA1HKA3R3B	50V 3.3U
C317, 318	ECFR1E332KR	25V 3300P
C319	ECEA1HKA3R3B	50V 3.3U
C320	ECEA1CKA100B	16V 10U
C322, 323	ECBT1H102KB5	50V 1000P
C324	ECBT1H471KB5	50V 470P
C401	ECEA1CKA220B	16V 22U E, EB, EG
C402, 403	ECFR1E332KR	25V 3300P E, EB, EG
C404	ECFR1E103KR	25V 0.01U E, EB, EG
C405	ECBT1E103ZF	25V 0.01U E, EB, EG
C406	ECEA1CKA100B	16V 10U E, EB, EG
C407	ECEA1EKA4R7B	25V 4.7U E, EB, EG
C408	ECEA1CKA100B	16V 10U E, EB, EG

Ref. No.	Part No.	Values & Remarks
C409	ECEA1EKA4R7B	25V 4.7U E, EB, EG
C410	ECEA0JKA470B	6.3V 47U E, EB, EG
C411	ECFR1E223KR	25V 0.022U E, EB, EG
C412	ECFR1E333KR	25V 0.033U E, EB, EG
C413	ECFR1E682KR	25V 6800P E, EB, EG
C414	ECFR1E333KR	25V 0.033U E, EB, EG
C415	ECEA1HKAR47B	50V 0.47U E, EB, EG
C416	ECEA1CKA100B	16V 10U E, EB, EG
C701, 702	ECKR1H103ZF5	50V 0.01U
C703	ECKR2H102ZF5	500V 1000P
C705	ECA1EM102E	25V 1000U ⚠
C706	ECA1CM222E	16V 2200U ⚠
C707	ECA1CM221B	16V 220U
C708	ECEA1HKAR47B	50V 0.47U
C710, 711	ECBT1E103ZF	25V 0.01U
C712	ECEA1CKA100B	16V 10U
C713	ECA1VM331B	35V 330U
C714	ECKR2H102ZF5	500V 1000P
C715	ECA1VM101B	35V 100U ⚠
C716	ECBT1E103ZF	25V 0.01U
C717	ECEA1CKA100B	16V 10U
C718, 719	ECEA1VU470	35V 47U
C720, 721	ECKR2H102ZF5	500V 1000P
C722, 723	ECKR1H103ZF5	50V 0.01U
C727	ECKR1H103ZF5	50V 0.01U
C904	ECBT1E103ZF	25V 0.01U
C905	ECEA1EKA4R7B	25V 4.7U
C911, 912	ECBT1H150JC5	50V 15P
C914	ECA0JM471B	6.3V 470U
C915	ECBT1H102KB5	50V 1000P
C921	ECA1AM102B	10V 1000U
C922	ECEA0JKA101B	6.3V 100U
C923	ECBT1H102KB5	50V 1000P
C924	ECEA1HKA2R2B	50V 2.2U
C925	ECEA1HKAR47B	50V 0.47U
C926	ECBT1E103ZF	25V 0.01U
C927	ECEA1HKA3R3B	50V 3.3U
C928	ECEA1VKA100B	35V 10U
C929	ECEA0JKA101B	6.3V 100U
C930-935	ECBT1H331KB5	50V 330P
C937	ECEA1CKA330B	16V 33U
C938, 939	ECKT1H223ZF	50V 0.022U
C940-943	ECBT1H331KB5	50V 330P
C951, 952	ECBT1E103ZF	25V 0.01U
C991	ECBT1E103ZF	25V 0.01U E, EB

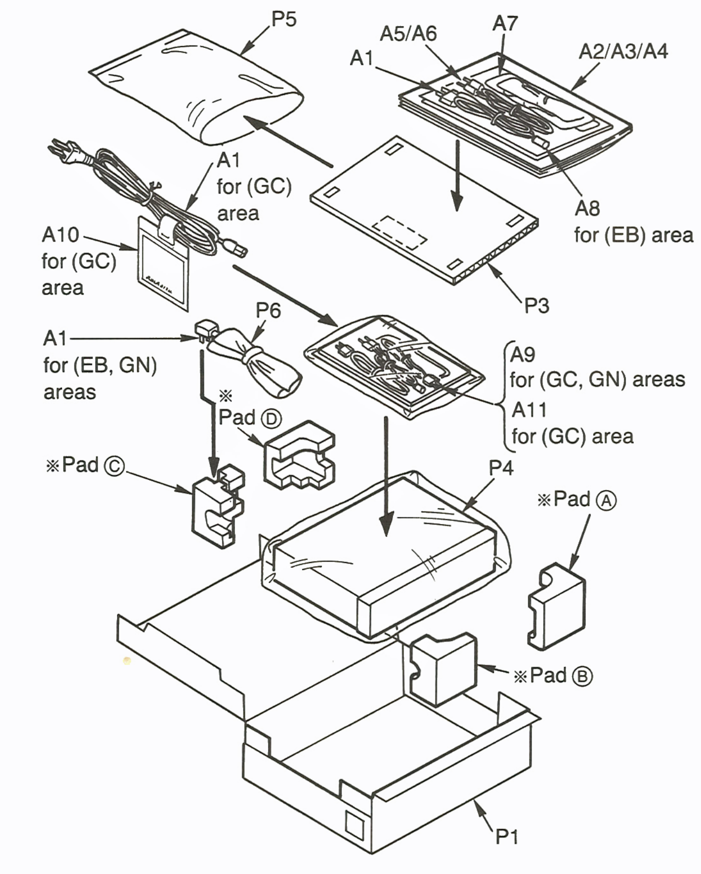
■ CABINET PARTS LOCATION


1
2
3
4
A
B
C
D
E
F
1
2
3
5
22
22
22
3
23
F1
FC704
JK701
FC703
CN701
21
24
23
2
JK301
4
JK101
23
2
21
24
20
CN901
CN902
CN903
21
21
24
21
CP904
18
8
13
7
16
11
24
15
7
20
9
10
CN904
11-1
22
22
6
19
12
17
CP901
9
CP902
CP903

Note: The "(SF)" mark denotes the standard part.
∗[VRD]: indicates parts that are supplied by Video Recorder Division.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RKM0078-1K	CABINET	
2	SNE2129-1	SCREW	
3	XTBS3+8JFZ1	SCREW	
4	RWJ1806120KQ	FLAT CABLE (6P) (W701)	
5	RGR0148A-H1	REAR PANEL	(E)
5	RGR0148A-J	REAR PANEL	(EB, GN)
5	RGR0148A-G1	REAR PANEL	(EG)
5	RGR0148B-A1	REAR PANEL	(GC)
6	RGW0174-T	KNOB, TUNING CONTROL	
7	RKA0053-A	FOOT	
8	RMK0174-2	BOTTOM BOARD	
9	RMN0195	FL SPACER	
10	RMN0220B	FL HOLDER	
11	RFKGTGT550EK	FRONT PANEL ASS'Y	(E, EB, EG)
11	RFKGTGT550GC	FRONT PANEL ASS'Y	(GC, GN)
11-1	RKW0269B-K	FL PANEL	
12	RGK0543-S	ORNAMENT	
13	RFKNTGT650EA	PANEL LIGHT (A) ASS'Y	
15	RGU0879A-K	BUTTON, PRESET etc.	
16	RGU0880A-K	BUTTON, FUNCTION etc.	(E, EB, EG)
16	RGU0880B-K	BUTTON, FUNCTION etc.	(GC, GN)
17	RGU0881A-K	BUTTON, MODE etc.	
18	RGU0882-K	BUTTON, POWER	
19	RHN90001	NUT	
20	XTBS26+8J	SCREW	
21	SHE187-2	P. C. B. SUPPORT	
22	XTBS3+8JFZ1	SCREW	
23	XTB3+20JFZ	SCREW	
24	XTB3+6J	SCREW	
		PACKING MATERIALS	
P1	RPG1591	PACKING CASE	(E, EG, GC)
P1	RPG1592	PACKING CASE	(EB)
P1	RPG1597	PACKING CASE	(GN)
P2	RPN0628-1	PAD	(E, EG, GC)
P2	RPN0690	PAD	(EB, GN)
P3	RPQ0164	ACCESSORY PAD	
P4	XZB50X65A02Z	PROTECTION COVER (UNIT)	
P5	XZB24X34C04	PROTECTION COVER	
P6	RPH0032	MIRROR SHEET	(EB, GN)
		ACCESSORIES	
A1	RJA0019-2K	AC POWER SUPPLY CORD	⚠(E, EG, GC) (SF)
A1	VJA0733	AC POWER SUPPLY CORD	⚠(EB) (SF) [VRD]
A1	RJA0036-K	AC POWER SUPPLY CORD	⚠(GN)
A2	RQA0013	WARRANTY CARD	(E, EB, EG)
A2	RQX7433ZA	WARRANTY CARD	(GN)
A3	RQCB0169	SERVICE CENTER LIST	
A4	RFKSTGT650EK	INSTRUCTIONS MANUAL	(E)
A4	RQT2000-B	INSTRUCTIONS MANUAL	(EB)
A4	RQT2003-D	INSTRUCTIONS MANUAL	(EG)
A4	RFKSTGT550GC	INSTRUCTIONS MANUAL	(GC)
A4	RQT2005-L	INSTRUCTIONS MANUAL	(GN)
A5	RSA0007	FM INDOOR ANTENNA	
A6	SJP2276	STEREO CONNECTION CABLE	
A7	SPB1163T	LW/MW LOOP ANTENNA	
A7-1	SMA233-1M	ANTENNA HOLDER	
A7-2	XTN3+10AFZ	SCREW	
A8	SJP9009	ATTACHMENT PLUG	⚠(EB)
A9	RFE0014	PLUG	⚠(GC, GN)
A10	RQLA0134	CAUTION LABEL	(GC)
A11	SJP5213-2	POWER PLUG ADAPTOR	⚠(GC)

■ PACKAGING


P5
A5/A6
A7
A1
A2/A3/A4
A1 for (GC) area
A8 for (EB) area
A10 for (GC) area
P3
A1 for (EB, GN) areas
P6
※Pad Ⓓ
A9 for (GC, GN) areas
A11 for (GC) area
※Pad Ⓒ
P4
※Pad Ⓐ
※Pad Ⓑ
P1

P2: ※Pad ⒶⒷⒸⒹ Ass'y

Printed in Japan
F930512000FF/YU/TN